



**Generation Interconnection
Feasibility Study Report
for
Queue Project AF2-197
EAST TOWANDA 115 KV
40.32 MW Capacity / 100.8 MW Energy**

July 2020

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1 Introduction

This Feasibility Study has been prepared in accordance with the PJM Open Access Transmission Tariff, 36.2, as well as the Feasibility Study Agreement between the Interconnection Customer (IC), and PJM Interconnection, LLC (PJM), Transmission Provider (TP). The Interconnected Transmission Owner (ITO) is Mid-Atlantic Interstate Transmission, LLC (MAIT) (PENELEC zone).

2 Preface

The intent of the feasibility study is to determine a plan, with ballpark cost and construction time estimates, to connect the subject generation to the PJM network at a location specified by the Interconnection Customer. The Interconnection Customer may request the interconnection of generation as a capacity resource or as an energy-only resource. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: (1) Direct Connections, which are new facilities and/or facilities upgrades needed to connect the generator to the PJM network, and (2) Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system.

In some instances a generator interconnection may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection, may also contribute to the need for the same network reinforcement. Cost allocation rules for network upgrades can be found in PJM Manual 14A, Attachment B. The possibility of sharing the reinforcement costs with other projects may be identified in the feasibility study, but the actual allocation will be deferred until the impact study is performed.

An Interconnection Customer with a proposed new Customer Facility that has a Maximum Facility Output equal to or greater than 100 MW shall install and maintain, at its expense, phasor measurement units (PMUs). See Section 8.5.3 of Appendix 2 to the Interconnection Service Agreement as well as section 4.3 of PJM Manual 14D for additional information.

The Feasibility Study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities. The project developer is responsible for the right of way, real estate, and construction permit issues. For properties currently owned by Transmission Owners, the costs may be included in the study.

3 General

The Interconnection Customer (IC), has proposed a Storage generating facility located in Bradford County, Pennsylvania. The installed facilities will have a total capability of 100.8 MW with 40.32 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is October 01, 2022. This study does not imply a TO commitment to this in-service date.

Queue Number	AF2-197
Project Name	EAST TOWANDA 115 KV
State	Pennsylvania
County	Bradford
Transmission Owner	MAIT (PENELEC)
MFO	100.8
MWE	100.8
MWC	40.32
Fuel	Storage
Basecase Study Year	2023

Any new service customers who can feasibly be commercially operable prior to June 1st of the basecase study year are required to request interim deliverability analysis.

4 Point of Interconnection

Note that FirstEnergy provided physical connection costs for only the Secondary POI as there was a miscommunication after the POIs were swapped on the Feasibility Study Kickoff call. A connection to the 115 kV bus in the FE zone runs between approximately \$2-5 million depending on the specific scope (referencing projects with similar connections). If the customer chooses the 115 kV connection for the System Impact phase, a more detailed scope and cost will be provided at that time.

PJM did study the Primary (East Towanda 115 kV) and Secondary (East Towanda 230 kV) POIs correctly which is reflected in the Summer Peak Load Flow Analysis section of this report.

4.1 Primary POI

The interconnection of the project at a Primary POI can be accomplished by installing new 115 kV cross bus with two 115 kV breakers.

4.2 Secondary POI

The interconnection of the project at the Secondary POI will be accomplished by installing two 230 kV breakers at East Towanda Substation to construct a new 230 kV terminal position. The existing East Towanda #4 transformer 230 kV lead will be relocated to this new position. The vacated #4 transformer terminal position will then be upgraded to accommodate the connection of the AF2-197 generator lead line.

A full scope of work or estimated cost is not normally provided for the Secondary POI but since FirstEnergy already has it completed due to the miscommunication in Primary and Secondary POI, we are including it in this report.

5 Cost Summary

5.1 Primary POI

As explained above in the POI section, FirstEnergy provided physical connection costs for only the Secondary POI as there was a miscommunication after the POIs were swapped on the Feasibility Study Kickoff call. A connection to the 115 kV bus in the FE zone runs between approximately \$2-5 million depending on the specific scope (referencing projects with similar connections). If the customer chooses the 115 kV connection for the System Impact phase, a more detailed scope and cost will be provided at that time.

Description	Total Cost
Total Physical Interconnection Costs	Between \$2-5 M ¹
Total System Network Upgrade Costs	\$471,807,921 ²³

5.2 Secondary POI

The AF2-197 project will be responsible for the following costs for the Secondary POI:

Description	Total Cost
Total Physical Interconnection Costs	\$5,770,000 ⁴
Total System Network Upgrade Costs	Not provided for Secondary POI

This cost excludes a Federal Income Tax Gross Up charges. This tax may or may not be charged based on whether this project meets the eligibility requirements of IRS Notice 88-129. If at a future date it is determined that the Federal Income Tax Gross charge is required, the Transmission Owner shall be reimbursed by the Interconnection Customer for such taxes.

Cost allocations for any System Upgrades will be provided in the System Impact Study Report.

¹ Note that FirstEnergy provided connection costs for only the Secondary POI as there was a miscommunication after the POIs were swapped on the Feasibility Study Kickoff call. A connection to the 115 kV bus in the FE zone runs between approximately \$2-5 million depending on the specific scope (referencing projects with similar connections). If the customer chooses the 115 kV connection for the System Impact phase, a more detailed scope and cost will be provided at that time.

² This project currently causes and contributes to overloads of the Transmission System (see Summer Peak Load Flow Analysis section below) and therefore has potential to have cost allocation for the system reinforcements listed in the report. This will be re-evaluated in the System Impact phase. The results may vary with queue customers withdrawing from the queue and other generators deactivating over time. If a customer is the first to cause the need for a project (causes loading to exceed 100% of rating), then the customer is responsible. If a customer's MW contribution to a facility that is already overloaded by a prior queue is less than 5 MW, then they will not receive cost allocation.

³ It should be noted that some of the contingencies taken in the analysis may not be valid due to system condition changes that were not captured in the model. This will be re-evaluated for validity in the System Impact phase.

⁴ PJM does not provide System Reinforcement costs for the Secondary POI.

6 Transmission Owner Scope of Work

6.1 Primary POI

The interconnection of the project at a Primary POI can be accomplished by installing new 115 kV cross bus with two 115 kV breakers.

The total physical interconnection costs is given in the table below:

Description	Total Cost
To be provided in the System Impact phase if the Primary POI is selected.	\$2-5 M ¹

6.2 Secondary POI

The interconnection of the project at the Secondary POI will be accomplished by installing two 230 kV breakers at East Towanda Substation to construct a new 230 kV terminal position. The existing East Towanda #4 transformer 230 kV lead will be relocated to this new position. The vacated #4 transformer terminal position will then be upgraded to accommodate the connection of the AF2-197 generator lead line.

A full scope of work or estimated cost is not normally provided for the Secondary POI but since FirstEnergy already has it completed due to the miscommunication in Primary and Secondary POI, we are including it in this report.

The total physical interconnection costs is given in the table below:

Description	Total Cost
Install disconnect switch and associated facilities for generator lead line exit in the vacated #4 transformer position at East Towanda substation.	\$310,000
Install two 230 kV breakers and associated facilities to create a new double breaker bay. Connect the #4 transformer to this new terminal. Reconnect the #2 230 kV capacitor to the #1 230 kV bus.	\$5,460,000
Total Physical Interconnection Costs	\$5,770,000

7 Schedule

7.1 Primary POI

If the customer chooses the Primary POI, a schedule will be provided for an estimated elapsed time to complete the work. Based on other 115 kV bus connected queue projects, it is estimated to be between 12 and 24 months to complete a 115 kV connection depending on the specific situation.

7.2 Secondary POI

Based on the scope of work for the interconnection facilities, it is expected to take a minimum of **24 months** after the signing of an Interconnection Construction Service Agreement to complete the installation. This assumes that there will be no environmental issues with any of the new properties associated with this project, that there will be no delays in acquiring the necessary permits for implementing the defined Direct Connection and network upgrades, and that all transmission system outages will be allowed when requested.

A full scope/cost/schedule is not normally provided for the Secondary POI but since FirstEnergy already has it completed due to the miscommunication in Primary and Secondary POI, we are including it in this report.

If the customer is ultimately responsible for network upgrades, then the schedule for those upgrades will be refined in future study phases. The customer would need to wait for those upgrades to be completed prior to commercial operation unless determined deliverable by an interim deliverability study. The elapsed time to complete any network upgrades is provided in the System Reinforcements table of this report².

8 Transmission Owner Analysis

8.1 Power Flow Analysis – Primary POI

Due to the miscommunication in Primary vs Secondary POI, FE only performed the analysis of the underlying transmission <100 kV system for the 230 kV Secondary POI connection. If the Primary POI is selected in the System Impact phase, they will analyze the <100 kV transmission system at that time.

8.2 Power Flow Analysis – Secondary POI

FE performed an analysis of its underlying transmission <100 kV system. The AF2-197 project did not contribute to any overloads on the <100 kV FE transmission system.

9 Interconnection Customer Requirements⁵

9.1 System Protection

The IC must design its Customer Facilities in accordance with all applicable standards, including the standards in FE's "Requirements for Transmission Connected Facilities" document located at:

<http://www.pjm.com/planning/design-engineering/to-tech-standards/private-firstenergy.aspx>.

Preliminary Protection requirements will be provided as part of the Facilities Study. Detailed Protection Requirements will be provided once the project enters the construction phase.

The IC has requested a non-standard GSU transformer winding configuration. This transformer is in violation of section 14.2.6 of FE's "Requirements for Transmission Connected Facilities" document and will not be accepted. The GSU transformer must have a grounded wye connection on the high (utility) side and a delta connection on the low (generator) side.

9.2 Compliance Issues and Interconnection Customer Requirements

The proposed Customer Facilities must be designed in accordance with FE's "Requirements for Transmission Connected Facilities" document located at: <http://www.pjm.com/planning/design-engineering/to-tech-standards/private-firstenergy.aspx>. In particular, the IC is responsible for the following:

1. The purchase and installation of a fully rated 230 kV circuit breaker to protect the AF2-197 generator lead line. A single circuit breaker must be used to protect this line; if the project has several GSU transformers, the individual GSU transformer breakers cannot be used to protect this line.
2. The purchase and installation of the minimum required FE generation interconnection relaying and control facilities. This includes over/under voltage protection, over/under frequency protection, and zero sequence voltage protection relays.
3. The purchase and installation of supervisory control and data acquisition ("SCADA") equipment to provide information in a compatible format to the FE Transmission System Control Center.
4. Compliance with the FE and PJM generator power factor and voltage control requirements.
5. The execution of a back-up service agreement to serve the customer load supplied from the AF2-197 generation project metering point when the units are out-of-service. This assumes the intent of the IC is to net the generation with the load.

⁵ The requirements provided are for the Secondary POI due to the miscommunication. Similar requirements exist for the 115 kV connection.

The IC will also be required to meet all PJM, ReliabilityFirst, and NERC reliability criteria and operating procedures for standards compliance. For example, the IC will need to properly locate and report the over and under voltage and over and under frequency system protection elements for its units as well as the submission of the generator model and protection data required to satisfy the PJM and ReliabilityFirst audits. Failure to comply with these requirements may result in a disconnection of service if the violation is found to compromise the reliability of the FE Transmission System.

9.3 Power Factor Requirements

The IC shall design its [wind-powered] [non-synchronous] Customer Facility with the ability to maintain a power factor of at least 0.95 leading (absorbing VARs) to 0.95 lagging (supplying VARs) measured at the high-side of the facility substation transformer(s) connected to the FE Transmission System

10 Revenue Metering and SCADA Requirements

10.1 PJM Requirements

The Interconnection Customer will be required to install equipment necessary to provide Revenue Metering (KWH, KVARH) and real time data (KW, KVAR) for IC's generating Resource. See PJM Manuals M-01 and M-14D, and PJM Tariff Section 8 of Attachment O.

10.2 Interconnected Transmission Owner Requirements

The IC will be required to comply with all Interconnected Transmission Owner's revenue metering requirements for generation interconnection customers located at the following link:

<http://www.pjm.com/planning/design-engineering/to-tech-standards/>

11 Summer Peak - Load Flow Analysis - Primary POI³

The Queue Project AF2-197 was evaluated as a 100.9 MW (Capacity 40.3 MW) injection at the East Towanda 115 kV substation in the PENELEC area. Project AF2-197 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF2-197 was studied with a commercial probability of 53.0 %. Potential network impacts were as follows:

11.1 Generation Deliverability

(Single or N-1 contingencies for the Capacity portion only of the interconnection)

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344856	200706	26N.MESH PN	230.0	PENELEC	200708	26OXBOW	230.0	PENELEC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	984.0	98.91	100.88	DC	20.32

11.2 Multiple Facility Contingency

(Double Circuit Tower Line, Fault with a Stuck Breaker, and Bus Fault contingencies for the full energy output)

None

11.3 Contribution to Previously Identified Overloads

(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
101145523	200674	26TOWANDA	115.0	PENEL EC	200677	26NOMESHO	115.0	PENEL EC	1	PN-P1-2-PN-230-013A	single	202.0	161.61	166.67	DC	10.23
99344591	200675	26E.TWANDA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	615.0	136.68	138.81	DC	14.28
99344592	200675	26E.TWANDA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	Base Case	single	515.0	133.04	135.23	DC	11.94
99344822	200675	26E.TWANDA	230.0	PENEL EC	130763	HILSD230	230.0	NYISO	1	PN-P1-2-PN-230-102T	single	531.0	105.34	107.89	DC	13.57
99344525	200676	26E.SAYRE	115.0	PENEL EC	130836	N.WAV115	115.0	NYISO	1	PN-P1-2-PN-230-101T	single	128.0	108.37	113.28	DC	6.28
99343911	200706	26N.MESHPN	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	AP-P2-2-WP-230-005T	bus	984.0	119.04	123.71	DC	45.7
99343926	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	AP-P2-2-WP-230-005T	bus	984.0	120.64	122.78	DC	46.43
99344367	200767	26HOMER CT	230.0	PENEL EC	200793	26SEWARD2	230.0	PENEL EC	1	PN-P2-3-PN-230-9G-A	breaker	813.0	106.65	107.18	DC	9.54
99343894	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	PN-P2-3-PN-230-001T	bus	824.0	142.62	143.59	DC	17.83
99344138	200769	26HOMER CY	345.0	PENEL EC	999392	26HOMER CT	1.0	PENEL EC	N	PN-P2-3-PN-230-9E	breaker	807.0	162.14	163.13	DC	17.85
99344208	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	PN-P2-3-PN-230-9I	breaker	824.0	142.62	143.59	DC	17.83
99344108	200795	26SHELOCTA	230.0	PENEL EC	200810	26KEYSTONE	230.0	PENEL EC	1	ATSI-P2-3-CEI-345-004D	breaker	917.0	189.03	189.77	DC	14.75
99344237	200810	26KEYSTONE E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PJM500_PN_P4-500-001A	breaker	635.0	141.91	142.55	DC	8.9
99344238	200810	26KEYSTONE E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PJM500_PN_P4-500-001D	breaker	635.0	141.91	142.55	DC	8.9
99344415	200819	26ERIE SE	230.0	PENEL EC	200600	26ERIE SO	345.0	PENEL EC	8	PN-P2-3-PN-115-23D	breaker	866.0	101.51	102.0	DC	9.48
98767556	200908	26CHAPMAN+	230.0	PENEL EC	235220	01MOSHAN	230.0	AP	1	Base Case	single	520.0	119.88	121.1	DC	6.33

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE CT LOADING %	POST PROJE CT LOADING %	AC DC	MW IMPACT
99344287	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PJM	3	PN-P2_3-PN-230-0252-C	breaker	1066.0	122.37	122.83	DC	11.33
99344288	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PJM	3	PN-P2_3-PN-230-0252-B	breaker	1066.0	122.33	122.79	DC	11.33
99344289	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PJM	3	PN-P2_3-PN-230-0252-A	breaker	1066.0	122.32	122.78	DC	11.33
99344635	200924	26CANYON	230.0	PENEL EC	200706	26N.MESH PN	230.0	PENEL EC	1	Base Case	single	546.0	124.42	126.49	DC	11.94
99344636	200924	26CANYON	230.0	PENEL EC	200706	26N.MESH PN	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	666.0	125.34	127.31	DC	14.28
99344342	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	3	PL_P42_001057	breaker	1167.0	117.29	118.26	DC	24.63
99344399	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	4	PL_P42_001056	breaker	1145.0	104.33	105.22	DC	22.21
99344400	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	4	PL_P42_001055	breaker	1145.0	104.33	105.22	DC	22.21
99344801	919490	AA2-000 TAP	230.0	PENEL EC	200908	26CHAPMAN+	230.0	PENEL EC	1	Base Case	single	546.0	114.17	115.33	DC	6.33
99343897	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P2-2-PN-230-001T	bus	824.0	142.61	143.58	DC	17.83
99344213	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P2-3-PN-230-9I	breaker	824.0	142.61	143.58	DC	17.83
99344143	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	PN-P2-3-PN-230-9E	breaker	807.0	162.13	163.12	DC	17.85
99344242	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PJM500_PN_P4-500-001A	breaker	634.0	141.39	142.04	DC	8.9
99344243	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PJM500_PN_P4-500-001D	breaker	634.0	141.39	142.04	DC	8.9

11.4 Potential Congestion due to Local Energy Deliverability

PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.

Note: Only the most severely overloaded conditions are listed below. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed which shall study all overload conditions associated with the overloaded element(s) identified.

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE CT LOADING %	POST PROJE CT LOADING %	AC DC	MW IMPACT
99344923	200568	26ERIE SO.	230.0	PENEL EC	200600	26ERIE SO	345.0	PENEL EC	5	PN-P1-3-PN-230-006	operation	776.0	108.64	109.14	DC	8.7
101145522	200674	26TOWAND A	115.0	PENEL EC	200677	26NO MESHO	115.0	PENEL EC	1	PN-P1-2-PN-230-013A	operation	202.0	190.96	203.2	DC	25.56
99344584	200675	26E.TWAND A	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	Base Case	operation	515.0	159.22	164.01	DC	29.86
99344585	200675	26E.TWAND A	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	operation	615.0	153.23	158.65	DC	35.7

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE CT LOADI NG %	POST PROJE CT LOADI NG %	AC DC	MW IMPA CT
99344586	200675	26E.TWANDA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	200908 26CHAPMA N+ 230 235220 01MOSHAN 230 230 1	operation	615.0	153.23	158.65	DC	35.7
99344587	200675	26E.TWANDA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	200908 26CHAPMA N+ 230 919490 AA2-000 TAP 230 1	operation	615.0	153.23	158.65	DC	35.7
99344816	200675	26E.TWANDA	230.0	PENEL EC	130763	HILSD230	230.0	NYISO	1	PN-P1-2-PN-230-102T	operation	531.0	123.5	129.87	DC	33.94
99344524	200676	26E.SAYRE	115.0	PENEL EC	130836	N.WAV115	115.0	NYISO	1	PN-P1-2-PN-230-101T	operation	128.0	123.45	135.72	DC	15.71
99344849	200706	26N.MESHPN	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	Base Case	operation	855.0	111.97	117.22	DC	44.63
99344850	200706	26N.MESHPN	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	200908 26CHAPMA N+ 230 919490 AA2-000 TAP 230 1	operation	984.0	113.23	118.42	DC	50.79
99344851	200706	26N.MESHPN	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	200908 26CHAPMA N+ 230 235220 01MOSHAN 230 230 1	operation	984.0	113.23	118.42	DC	50.79
99344852	200706	26N.MESHPN	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	operation	984.0	113.23	118.42	DC	50.79
99344869	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	AP-P1-2-WP-230-324T_FSA_A-B	operation	984.0	112.24	114.61	DC	51.57
99344870	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	200908 26CHAPMA N+ 230 919490 AA2-000 TAP 230 1	operation	984.0	112.24	114.61	DC	51.57
99344871	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	200908 26CHAPMA N+ 230 235220 01MOSHAN 230 230 1	operation	984.0	112.24	114.61	DC	51.57
99344872	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	Base Case	operation	855.0	108.46	110.86	DC	45.35
99344534	200767	26HOMERCT	230.0	PENEL EC	200795	26SHELOCTA	230.0	PENEL EC	1	PN-P1-2-PN-345-107T	operation	917.0	196.97	197.7	DC	14.77
99344535	200767	26HOMERCT	230.0	PENEL EC	200795	26SHELOCTA	230.0	PENEL EC	1	ATSI-P1-2-CEI-345-700T	operation	917.0	196.97	197.7	DC	14.77
99344536	200767	26HOMERCT	230.0	PENEL EC	200795	26SHELOCTA	230.0	PENEL EC	1	Base Case	operation	731.0	175.95	176.68	DC	12.04
99344673	200769	26HOMERCY	345.0	PENEL EC	999392	26HOMERCT	1.0	PENEL EC	N	PN-P1-3-PN-230-004A	operation	807.0	145.86	146.85	DC	17.94
99344677	200769	26HOMERCY	345.0	PENEL EC	999392	26HOMERCT	1.0	PENEL EC	N	Base Case	operation	653.0	103.4	104.11	DC	10.29
99344708	200769	26HOMERCY	345.0	PENEL EC	999391	26HOMERCT	1.0	PENEL EC	S	PN-P1-3-PN-230-003A	operation	824.0	142.04	143.01	DC	17.84
99344712	200769	26HOMERCY	345.0	PENEL EC	999391	26HOMERCT	1.0	PENEL EC	S	Base Case	operation	647.0	102.0	102.7	DC	10.06

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE CT LOADI NG %	POST PROJE CT LOADI NG %	AC DC	MW IMPA CT
99344549	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	PN-P1-2-PN-345-107T	operati on	917.0	188.07	188.81	DC	14.9
99344550	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	ATSI-P1-2-CEI-345-700T	operati on	917.0	188.07	188.81	DC	14.9
99344553	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	Base Case	operati on	731.0	163.99	164.74	DC	12.03
99344766	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PN-P1-3-PN-500-001AT	operati on	635.0	135.6	136.25	DC	8.93
99344769	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	Base Case	operati on	494.0	116.1	116.65	DC	5.97
99344968	200819	26ERIE SE	230.0	PENEL EC	200600	26ERIE SO	345.0	PENEL EC	8	PN-P1-3-PN-230-008	operati on	866.0	100.17	100.63	DC	8.8
99344969	200819	26ERIE SE	230.0	PENEL EC	200600	26ERIE SO	345.0	PENEL EC	8	PN-P1-3-PN-230-027	operati on	866.0	100.17	100.63	DC	8.8
98767547	200908	26CHAPMA N+	230.0	PENEL EC	235220	01MOSHAN	230.0	AP	1	PL_P12_000193	operati on	621.0	138.12	142.15	DC	25.22
98767551	200908	26CHAPMA N+	230.0	PENEL EC	235220	01MOSHAN	230.0	AP	1	Base Case	operati on	520.0	136.76	139.79	DC	15.82
99344864	200912	26CONEMA GH	230.0	PENEL EC	200005	CONEM-GH	500.0	PJM	3	PN-P1_2-PN-230-0103	operati on	1066.0	118.82	119.3	DC	11.16
99344630	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	Base Case	operati on	546.0	149.11	153.64	DC	29.86
99344631	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	20090826CHAPMA N+ 23023522001MOSHAN 2302301	operati on	666.0	140.63	145.63	DC	35.7
99344632	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	operati on	666.0	140.63	145.63	DC	35.7
99344633	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	20090826CHAPMA N+ 230919490AA2-000TAP 2301	operati on	666.0	140.63	145.63	DC	35.7
99344665	200940	26SCOTCHH LLW	230.0	PENEL EC	200675	26E.TWAND A	230.0	PENEL EC	1	Base Case	operati on	491.0	110.19	113.36	DC	15.57
99344949	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	4	PL_P13_100329	operati on	1145.0	102.41	103.27	DC	21.47
99344950	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	4	PL_P13_100347	operati on	1145.0	102.41	103.27	DC	21.47
99344962	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	3	PL_P13_100348	operati on	1167.0	100.51	101.35	DC	21.48
99344963	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	3	PL_P13_100328	operati on	1167.0	100.51	101.35	DC	21.48
98767518	235219	01MILES B	230.0	AP	235970	01DALE	230.0	AP	1	AP-P1-2-WP-230-322T	operati on	554.0	157.44	157.97	DC	6.43
99344737	919200	AA1-144 TAP	230.0	PENEL EC	200940	26SCOTCHH LLW	230.0	PENEL EC	1	Base Case	operati on	520.0	106.59	109.58	DC	15.57
99344795	919490	AA2-000 TAP	230.0	PENEL EC	200908	26CHAPMA N+	230.0	PENEL EC	1	PL_P12_000193	operati on	666.0	128.78	132.55	DC	25.22
99344796	919490	AA2-000 TAP	230.0	PENEL EC	200908	26CHAPMA N+	230.0	PENEL EC	1	Base Case	operati on	546.0	130.25	133.13	DC	15.82
98767615	944320	AF1-100 TAP	230.0	AP	200710	26SHAWVL 1	230.0	PENEL EC	1	AP-P1-3-WP-230-005	operati on	600.0	120.67	121.38	DC	9.4
98767616	944320	AF1-100 TAP	230.0	AP	200710	26SHAWVL 1	230.0	PENEL EC	1	AP-P1-2-WP-230-005B	operati on	600.0	120.67	121.38	DC	9.4
99344716	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P1-3-PN-230-003A	operati on	824.0	142.04	143.01	DC	17.84

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE CT LOADI NG %	POST PROJE CT LOADI NG %	AC DC	MW IMPA CT
99344720	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	Base Case	operation	647.0	102.0	102.7	DC	10.06
99344683	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	PN-P1-3-PN-230-004A	operation	807.0	145.84	146.84	DC	17.94
99344687	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	Base Case	operation	653.0	103.39	104.09	DC	10.29
99344774	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PN-P1-3-PN-500-001AT	operation	634.0	135.09	135.74	DC	8.93
99344779	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	Base Case	operation	493.0	115.38	115.93	DC	5.97

11.5 System Reinforcements - Summer Peak Load Flow - Primary POI

ID	Idx	Facility	Upgrade Description	Cost
99343911,99344856	1	26N.MESHPN 230.0 kV - 26OXBOW 230.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0048A (1807) : Construct a new 230 kV circuit (approximately 27 miles) between North Meshoppen and Lackawanna 230 kV. Connect the new circuit between at North Meshoppen substation. Project Type : CON Cost : \$115,554,600 Time Estimate : 72.0 Months	\$115,554,600
99343926	6	26OXBOW 230.0 kV - LACK 230.0 kV Ckt 1	<u>PPL</u> Not a PPL Violation Note: It should be noted that some of the contingencies taken in the analysis may not be valid due to system condition changes that were not captured in the model. This will be re-evaluated for validity in the System Impact phase.	
99344525	5	26E.SAYRE 115.0 kV - N.WAV115 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0007A (1706) : Replace relay at East Sayre on North Waverly terminal Note: PJM to coordinate with NYSEG on miscellaneous relay replacement Project Type : FAC Cost : \$427,980 Time Estimate : 12.0 Months PN-AF2-F-0007C (1708) : Replace line relaying at East Sayre. Project Type : FAC Cost : \$427,980 Time Estimate : 12.0 Months <u>NYISO</u> NonPJMArea (939) : The external (i.e. Non-PJM) Transmission Owner, NYISO, will not evaluate this violation until the impact study phase.	\$855,960
99344801	18	AA2-000 TAP 230.0 kV - 26CHAPMAN+ 230.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0035 (1773) : Reconductor 0.1 miles of transmission line Project Type : FAC Cost : \$427,980 Time Estimate : 18.0 Months Note: It should be noted that some of the contingencies taken in the analysis may not be valid due to system condition changes that were not captured in the model. This will be re-evaluated for validity in the System Impact phase.	\$427,980
99344415	12	26ERIE SE 230.0 kV - 26ERIE SO 345.0 kV Ckt 8	<u>PENELEC</u> PN-AF2-F-0003 (1701) : Replace circuit switcher on the high side of the transformer with a 230 kV breaker Project Type : CON Cost : \$978,240 Time Estimate : 12.0 Months	\$978,240

ID	Idx	Facility	Upgrade Description	Cost
99344237,99344238	11	26KEYSTONE 230.0 kV - STAR592 1.0 kV Ckt 4	PENELEC PN-AF2-F-0005 (1703) : Construct 500 kV yard consisting of three-500 kV breakers configured in a breaker-and-a-half layout (initially a ring bus) Tap the Keystone - Conemaugh 500 kV line and loop into the new Homer City 500 kV yard. Install one 500/345 kV transformer. Install a new 345 kV breaker-and-a-half string using three new breakers Project Type : FAC Cost : \$85,596,000 Time Estimate : 48.0 Months PJM-AF1-F-0001a (1908) : Replace/ upgrade transformer detail. Reconductor existing section of 1033.5 AAC subconductor circular (SCCIR) Project Type : FAC Cost : \$26,180,000 Time Estimate : 24.0 Months PJM-AF1-F-0001b (1909) : Replace 5.83 Amp BDD relay (thermal) Project Type : FAC Cost : \$357,000 Time Estimate : 12.0 Months	\$112,133,000
99344287,99344289,99344288	14	26CONEMAG H 230.0 kV - CONEM-GH 500.0 kV Ckt 3		
99344367	7	26HOMER CT 230.0 kV - 26SEWARD 2 230.0 kV Ckt 1		
99344143	20	STAR601 1.0 kV - 26HOMER CT 230.0 kV Ckt N		
99344108	10	26SHELOCTA 230.0 kV - 26KEYSTONE 230.0 kV Ckt 1		
99344138	9	26HOMER CY 345.0 kV - STAR601 1.0 kV Ckt N		
99344213,99343897	19	STAR602 1.0 kV - 26HOMER CT 230.0 kV Ckt S		
99343894,99344208	8	26HOMER CY 345.0 kV - STAR602 1.0 kV Ckt S		
99344243,99344242	21	STAR592 1.0 kV - KEYSTONE 500.0 kV Ckt 4		

ID	Idx	Facility	Upgrade Description	Cost
99344822	4	26E.TWANDA 230.0 kV - HILSD230 230.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0006B (1705) : Replace line trap at East Towanda Project Type : FAC Cost : \$152,850 Time Estimate : 12.0 Months <u>NYISO</u> NonPJMArea (939) : The external (i.e. Non-PJM) Transmission Owner, NYISO, will not evaluate this violation until the impact study phase. Note: It should be noted that some of the contingencies taken in the analysis may not be valid due to system condition changes that were not captured in the model. This will be re-evaluated for validity in the System Impact phase.	\$152,850
101145523	2	26TOWANDA 115.0 kV - 26NO MESHO 115.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0045 (1798) : Reconductor 2 miles of transmission. Adjust relay settings as necessary at East Towanda and North Meshoppen Project Type : FAC Cost : \$6,114,000 Time Estimate : 30.0 Months b3137 (1900) : PJM Baseline Upgrade b3137. Rebuild 20 miles of the East Towanda - North Meshoppen 115 kV line. The baseline project has an projected in-service date of 06/01/2024. Project Type : FAC Cost : \$0 b2678 (1901) : PJM Baseline Upgrade b2678. Convert the East Towanda 115 kV substation to breaker and half configuration. The baseline project has an projected in-service date of 06/01/2020. Project Type : FAC Cost : \$0 s1729 (1902) : Expand the existing North Meshoppen 115 kV yard to a breaker-and-a-half configuration. (s1729) Project Type : FAC Cost : \$0	\$6,114,000
99344342	16	LACK 230.0 kV - LACKAW 500.0 kV Ckt 3	<u>PPL</u> R-PL-0008 (1914) : Re-Terminate LACK T4 500/230kV & LACK T3 500/230kV Project Type : CON Cost : \$7,000,000 Time Estimate : 30.0 Months	\$14,000,000
99344400,9934 4399	17	LACK 230.0 kV - LACKAW 500.0 kV Ckt 4	R-PL-0008 (1931) : Re-Terminate LACK T4 500/230kV & LACK T3 500/230kV Project Type : CON Cost : \$7,000,000 Time Estimate : 30.0 Months	

ID	Idx	Facility	Upgrade Description	Cost
99344591,9934 4592	3	26E.TWANDA 230.0 kV - 26CANYON 230.0 kV Ckt 1	<u>PENELEC</u> PN-AF2-F-0046A (1799) : Replace substation conductor at East Towanda Project Type : FAC Cost : \$152,850 Time Estimate : 12.0 Months PN-AF2-F-0046B (1800) : Reconductor 13.01 miles of transmission line. Replace transmission line drops at East Towanda Project Type : FAC Cost : \$55,680,198 Time Estimate : 54.0 Months PN-AF2-F-0046C (1801) : Replace disconnect switch at Canyon Project Type : FAC Cost : \$213,990 Time Estimate : 12.0 Months Note: It should be noted that some of the contingencies taken in the analysis may not be valid due to system condition changes that were not captured in the model. This will be re-evaluated for validity in the System Impact phase.	\$56,047,038
98767556	13	26CHAPMAN+ 230.0 kV - 01MOSHAN 230.0 kV Ckt 1	<u>APS</u> WP-AF2-F-0006A (679) : Replace 1033.5 ACSR bus conductor at Moshannon substation. Project Type : FAC Cost : \$162,816 Time Estimate : 12.0 Months WP-AF2-F-0006B (680) : Replace 1033.5 ACSR risers at Moshannon substation . Project Type : FAC Cost : \$162,816 Time Estimate : 12.0 Months <u>PENELEC</u> PN-AF2-F-0034A (1772) : Reconductor 29.20 miles of transmission line Project Type : FAC Cost : \$124,970,160 Time Estimate : 72.0 Months Note: It should be noted that some of the contingencies taken in the analysis may not be valid due to system condition changes that were not captured in the model. This will be re-evaluated for validity in the System Impact phase.	\$125,295,791

ID	Idx	Facility	Upgrade Description	Cost
99344635,9934 4636	15	26CANYON 230.0 kV - 26N.MESHPN 230.0 kV Ckt 1	PENELEC PN-AF2-F-0047A (1804) : Reconductor 9.24 miles of transmission line Project Type : FAC Cost : \$39,545,352 Time Estimate : 48.0 Months PN-AF2-F-0047B (1805) : Replace disconnect switch at Canyon Project Type : FAC Cost : \$213,990 Time Estimate : 12.0 Months PN-AF2-F-0047C (1806) : Adjust line relaying as necessary at North Meshoppen Project Type : FAC Cost : \$489,120 Time Estimate : 12.0 Months b2952 (1858) : PJM Baseline Upgrade b2952. Replace the North Meshoppen #3 230/115kV transformer eliminating the old reactor and installing two breakers to complete a 230kV ring bus at North Meshoppen. The baseline project has a projected in-service date of 06/01/2022. Project Type : CON Cost : \$0 Note: It should be noted that some of the contingencies taken in the analysis may not be valid due to system condition changes that were not captured in the model. This will be re-evaluated for validity in the System Impact phase.	\$40,248,462
N/A	N/A	WESTOVER11 5 115.0 kV - 26LAUREL L 115.0 kV Ckt 1	Note: It should be noted that some of the contingencies taken in the analysis may not be valid due to system condition changes that were not captured in the model. This will be re-evaluated for validity in the System Impact phase.	\$0
N/A	N/A	26LAUREL L 115.0 kV - 26TIFFANY 115.0 kV Ckt 1	Note: It should be noted that some of the contingencies taken in the analysis may not be valid due to system condition changes that were not captured in the model. This will be re-evaluated for validity in the System Impact phase.	\$0
			TOTAL COST	\$471,807,921²³

11.6 Flow Gate Details - Primary POI

The following indices contain additional information about each facility presented in the body of the report. For each index, a description of the flowgate and its contingency was included for convenience. The intent of the indices is to provide more details on which projects/generators have contributions to the flowgate in question. All New Service Queue Requests, through the end of the Queue under study, that are contributors to a flowgate will be listed in the indices. Please note that there may be contributors that are subsequently queued after the queue under study that are not listed in the indices. Although this information is not used "as is" for cost allocation purposes, it can be used to gage the impact of other projects/generators. It should be noted the project/generator MW contributions presented in the body of the report are Full MW Impact contributions which are also noted in the indices column named "Full MW Impact", whereas the loading percentages reported in the body of the report, take into consideration the PJM Generator Deliverability Test rules such as commercial probability of each project as well as the ramping impact of "Adder" contributions. The MW Impact found and used in the analysis is shown in the indices column named "Gendeliv MW Impact".

11.6.1 Index 1

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99343911	200706	26N.MESHPN	PENELEC	200708	26OXBOW	PENELEC	1	AP-P2-2-WP-230-005T	bus	984.0	119.04	123.71	DC	45.7

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	11.2766	50/50	11.2766
200851	26MEHOOP3	5.7382	50/50	5.7382
200894	26K02	17.1541	Adder	20.18
200898	26AA1-106	6.4806	Adder	7.62
200917	26MTNTP_P28	2.9177	50/50	2.9177
200949	26X1-109	61.1623	50/50	61.1623
203283	26MANOR_T86	0.1014	50/50	0.1014
203347	26NME_Y1-047	1.9354	50/50	1.9354
203909	26Z1-038	8.6625	50/50	8.6625
203910	26Z1-091	9.4063	50/50	9.4063
203999	P-047 E	24.5379	Adder	28.87
235003	AC1-025 E	0.2027	Adder	0.24
236828	01GRAYMONT	0.5509	Adder	0.65
294573	P-028 E	67.6596	50/50	67.6596
916202	Z1-069 E	12.5370	Adder	14.75
918602	AA1-077 E	-8.5025	Adder	-10.0
918682	AA1-082 E	26.6512	50/50	26.6512
919201	AA1-144 OP	74.5432	50/50	74.5432
919491	AA2-000	100.6189	Adder	118.38
920341	AA2-132 (Suspended)	7.2516	Adder	8.53
920351	AA2-133	1.5271	50/50	1.5271
922932	AB1-082 OP (Suspended)	3.5046	Adder	4.12
923443	AB1-160 E	3.5820	Adder	4.21
930511	AB1-092	3.6944	Adder	4.35
934821	AD1-110	0.1459	50/50	0.1459
936421	AD2-055	7.6062	Adder	8.95
938332	AE1-051 BAT	1.2662	Merchant Transmission	1.2662
939171	AE1-147 C	1.6579	Adder	1.95
939172	AE1-147 E	1.1053	Adder	1.3
940201	AE2-001 C	1.6545	Adder	1.95
940202	AE2-001 E	1.1030	Adder	1.3
940681	AE2-055 C (Suspended)	1.6032	Adder	1.89
940682	AE2-055 E (Suspended)	1.0688	Adder	1.26
940861	AE2-074 C	2.6610	Adder	3.13
940862	AE2-074 E	3.5029	Adder	4.12
941191	AE2-113 C	8.4141	Adder	9.9
941192	AE2-113 E	9.0593	Adder	10.66
941261	AE2-120 C	1.6531	Adder	1.94
941262	AE2-120 E	1.1021	Adder	1.3
941271	AE2-121 C	0.8835	Adder	1.04

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941272	AE2-121 E	0.5899	Adder	0.69
941321	AE2-126 C	1.4861	Adder	1.75
941322	AE2-126 E	0.9908	Adder	1.17
941421	AE2-139 C	21.8690	Adder	25.73
941422	AE2-139 E	14.5793	Adder	17.15
942351	AE2-248 C	1.3016	Adder	1.53
942352	AE2-248 E	0.8677	Adder	1.02
942491	AE2-262 C	7.2633	Adder	8.55
942492	AE2-262 E	4.8809	Adder	5.74
942501	AE2-263 C	6.8275	Adder	8.03
942502	AE2-263 E	4.5584	Adder	5.36
943751	AF1-043	22.8185	Adder	26.85
944001	AF1-068 C O1	1.7269	Adder	2.03
944002	AF1-068 E O1	0.9714	Adder	1.14
944311	AF1-099 C	11.0256	Adder	12.97
944312	AF1-099 E	7.3504	Adder	8.65
944321	AF1-100 C	21.1268	Adder	24.86
944322	AF1-100 E	14.0845	Adder	16.57
944411	AF1-106 O1	6.5739	Adder	7.73
944471	AF1-112 C	1.7404	Adder	2.05
944472	AF1-112 E	0.9790	Adder	1.15
944671	AF1-132 C O1	1.6151	Adder	1.9
944672	AF1-132 E O1	1.0767	Adder	1.27
944771	AF1-142 C	17.6410	Adder	20.75
944772	AF1-142 E	11.7607	Adder	13.84
944841	AF1-149 C	1.6530	Adder	1.94
944842	AF1-149 E	1.1020	Adder	1.3
944881	AF1-153 C O1	1.4524	Adder	1.71
944882	AF1-153 E O1	0.9683	Adder	1.14
944901	AF1-155 C	1.4455	Adder	1.7
944902	AF1-155 E	0.9637	Adder	1.13
945161	AF1-181	0.1102	Adder	0.13
945171	AF1-182	0.5491	Adder	0.65
945181	AF1-183	0.1292	Adder	0.15
945331	AF1-198	0.7271	Adder	0.86
945491	AF1-214 C	1.6532	Adder	1.94
945492	AF1-214 E	1.1021	Adder	1.3
945551	AF1-220 C	11.5236	Adder	13.56
945552	AF1-220 E	7.6866	Adder	9.04
946111	AF1-276 C	8.5009	Adder	10.0
946112	AF1-276 E	4.1870	Adder	4.93
946121	AF1-277 C	8.5009	Adder	10.0
946122	AF1-277 E	4.1870	Adder	4.93
946131	AF1-278 C	6.7754	Adder	7.97
946132	AF1-278 E	3.3699	Adder	3.96
946211	AF1-286 C O1	2.6624	Adder	3.13
946212	AF1-286 E O1	1.8078	Adder	2.13
946421	AF1-306 C	6.3561	Adder	7.48
946422	AF1-306 E	25.4246	Adder	29.91
957451	AF2-039 C	0.5142	Adder	1.14
957452	AF2-039 E	0.3428	Adder	0.76
957581	AF2-052 C	2.7165	Adder	6.03

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957582	AF2-052 E	1.3215	Adder	2.93
957681	AF2-062 C	8.1917	Adder	18.18
957682	AF2-062 E	5.4611	Adder	12.12
957941	AF2-088 C	0.2476	Adder	0.55
957942	AF2-088 E	0.1651	Adder	0.37
959061	AF2-197 C O1	18.2811	50/50	18.2811
959062	AF2-197 E O1	27.4216	50/50	27.4216
959471	AF2-238 C	2.0124	Adder	4.47
959472	AF2-238 E	1.3416	Adder	2.98
959481	AF2-239 C	5.0215	50/50	5.0215
959482	AF2-239 E	4.0263	50/50	4.0263
959491	AF2-240 C	1.8815	Adder	4.18
959492	AF2-240 E	1.6027	Adder	3.56
959501	AF2-241 C	1.9686	Adder	4.37
959502	AF2-241 E	1.5156	Adder	3.36
959741	AF2-265 C	1.4422	Adder	3.2
959742	AF2-265 E	1.0733	Adder	2.38
959913	AF2-282 BAT	0.1007	Merchant Transmission	0.1007
959923	AF2-283 BAT	0.1007	Merchant Transmission	0.1007
960022	AF2-293 E	0.0854	Adder	0.19
960031	AF2-294 C	2.3176	Adder	5.14
960032	AF2-294 E	1.5451	Adder	3.43
960041	AF2-295 C	0.7661	Adder	1.7
960042	AF2-295 E	0.5108	Adder	1.13
960271	AF2-318 C	5.4287	50/50	5.4287
960272	AF2-318 E	3.6191	50/50	3.6191
961141	AF2-405	1.7421	Adder	3.87
961151	AF2-406	13.0656	Adder	29.0
961201	AF2-411 O1	40.1896	Adder	89.21
961211	AF2-412 O1	18.8515	Adder	41.85
961451	AF2-436	0.6673	50/50	0.6673
WEC	WEC	0.4804	Confirmed LTF	0.4804
LGEE	LGEE	0.8369	Confirmed LTF	0.8369
CPL	CPL	0.5365	Confirmed LTF	0.5365
CBM-W2	CBM-W2	11.2858	Confirmed LTF	11.2858
CBM-W1	CBM-W1	19.9785	Confirmed LTF	19.9785
TVA	TVA	1.7934	Confirmed LTF	1.7934
O-066	O-066	35.7840	Confirmed LTF	35.7840
CBM-S2	CBM-S2	5.5083	Confirmed LTF	5.5083
CBM-S1	CBM-S1	11.2038	Confirmed LTF	11.2038
G-007	G-007	5.1574	Confirmed LTF	5.1574
MEC	MEC	2.3342	Confirmed LTF	2.3342

11.6.2 Index 2

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
101145523	200674	26TOWANDA	PENELEC	200677	26NO MESHO	PENELEC	1	PN-P1-2-PN-230-013A	single	202.0	161.61	166.67	DC	10.23

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200649	26PENNTech	0.3714	80/20	0.3714
200665	26SHAWVL 3	1.5072	80/20	1.5072
200666	26SHAWVL 4	1.4899	80/20	1.4899
200887	26ARMNA MT	0.5912	80/20	0.5912
200898	26AA1-106	3.3036	80/20	3.3036
200949	26X1-109	26.2332	80/20	26.2332
203261	26BLOSSBCT	0.4864	80/20	0.4864
203283	26MANOR_T86	0.0519	80/20	0.0519
203349	26Z1-069 C	0.2495	80/20	0.2495
203350	26MILZ1-092	0.6000	80/20	0.6000
203351	26GROZ1-110	0.5698	80/20	0.5698
203352	26CANZ2-011	0.5698	80/20	0.5698
919201	AA1-144 OP	31.9154	80/20	31.9154
919491	AA2-000	44.5915	80/20	44.5915
920351	AA2-133	0.2275	80/20	0.2275
922932	AB1-082 OP (Suspended)	1.6238	80/20	1.6238
923442	AB1-160 C	0.0713	80/20	0.0713
930511	AB1-092	1.6373	80/20	1.6373
934801	AD1-108	0.0430	80/20	0.0430
934811	AD1-109	0.0315	80/20	0.0315
935061	AD1-142	0.0332	80/20	0.0332
936421	AD2-055	3.3708	80/20	3.3708
940861	AE2-074 C	1.2330	80/20	1.2330
941191	AE2-113 C	3.4749	80/20	3.4749
941421	AE2-139 C	10.9083	80/20	10.9083
942491	AE2-262 C	2.5070	80/20	2.5070
942501	AE2-263 C	2.3566	80/20	2.3566
943751	AF1-043	10.1125	80/20	10.1125
944311	AF1-099 C	3.8056	80/20	3.8056
944321	AF1-100 C	7.8540	80/20	7.8540
944411	AF1-106 O1	3.4958	80/20	3.4958
944771	AF1-142 C	6.0890	80/20	6.0890
945161	AF1-181	0.0406	80/20	0.0406
945171	AF1-182	0.2020	80/20	0.2020
945331	AF1-198	0.3711	80/20	0.3711
946111	AF1-276 C	3.5322	80/20	3.5322
946121	AF1-277 C	3.5322	80/20	3.5322
946131	AF1-278 C	2.8152	80/20	2.8152
946211	AF1-286 C O1	1.4158	80/20	1.4158
957581	AF2-052 C	2.1708	80/20	2.1708

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957681	AF2-062 C	6.4416	80/20	6.4416
959061	AF2-197 C O1	10.2256	80/20	10.2256
959471	AF2-238 C	2.1307	80/20	2.1307
959481	AF2-239 C	2.5693	80/20	2.5693
959491	AF2-240 C	1.8877	80/20	1.8877
959501	AF2-241 C	1.9751	80/20	1.9751
959741	AF2-265 C	1.5270	80/20	1.5270
960271	AF2-318 C	2.7776	80/20	2.7776
961141	AF2-405	1.7479	80/20	1.7479
961151	AF2-406	13.1092	80/20	13.1092
961201	AF2-411 O1	34.0710	80/20	34.0710
961211	AF2-412 O1	18.2585	80/20	18.2585
961451	AF2-436	0.0994	80/20	0.0994
WEC	WEC	0.1852	Confirmed LTF	0.1852
LGEE	LGEE	0.3240	Confirmed LTF	0.3240
CPL	CPL	0.2209	Confirmed LTF	0.2209
CBM-W2	CBM-W2	4.3898	Confirmed LTF	4.3898
CBM-W1	CBM-W1	7.6686	Confirmed LTF	7.6686
TVA	TVA	0.7014	Confirmed LTF	0.7014
CBM-S2	CBM-S2	2.2195	Confirmed LTF	2.2195
CBM-S1	CBM-S1	4.3793	Confirmed LTF	4.3793
MEC	MEC	0.9026	Confirmed LTF	0.9026

11.6.3 Index 3

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344591	200675	26E.TWANDA	PENELEC	200924	26CANYON	PENELEC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	615.0	136.68	138.81	DC	14.28

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	2.7835	80/20	2.7835
200643	26SENECA#2	2.6288	80/20	2.6288
200644	26SENECA#3	0.2588	80/20	0.2588
200887	26ARMNA MT	0.9749	80/20	0.9749
200898	26AA1-106	7.9120	80/20	7.9120
200949	26X1-109	60.8654	80/20	60.8654
201201	26WRREN CT	0.6284	80/20	0.6284
201477	26Y2-055	1.8543	80/20	1.8543
203261	26BLOSSBCT	1.0064	80/20	1.0064
203283	26MANOR_T86	0.0744	80/20	0.0744
203349	26Z1-069 C	0.4421	80/20	0.4421
203350	26MILZ1-092	1.0277	80/20	1.0277
203351	26GROZ1-110	1.3648	80/20	1.3648
203352	26CANZ2-011	1.3648	80/20	1.3648
919201	AA1-144 OP	74.9653	80/20	74.9653
919491	AA2-000	197.7334	80/20	197.7334
920341	AA2-132 (Suspended)	1.8688	80/20	1.8688
920351	AA2-133	0.5660	80/20	0.5660
922932	AB1-082 OP (Suspended)	2.8190	80/20	2.8190
923442	AB1-160 C	0.1263	80/20	0.1263
930511	AB1-092	7.2602	80/20	7.2602
934801	AD1-108	0.1029	80/20	0.1029
934811	AD1-109	0.0754	80/20	0.0754
935061	AD1-142	0.0568	80/20	0.0568
936421	AD2-055	14.9474	80/20	14.9474
940861	AE2-074 C	2.1405	80/20	2.1405
941191	AE2-113 C	5.1770	80/20	5.1770
941421	AE2-139 C	27.3328	80/20	27.3328
943751	AF1-043	44.8423	80/20	44.8423
944381	AF1-103 O1	1.2782	80/20	1.2782
944411	AF1-106 O1	5.9878	80/20	5.9878
945121	AF1-177	0.3196	80/20	0.3196
945331	AF1-198	0.7677	80/20	0.7677
946111	AF1-276 C	5.9315	80/20	5.9315
946121	AF1-277 C	5.9315	80/20	5.9315
946131	AF1-278 C	4.7275	80/20	4.7275
946211	AF1-286 C O1	2.4251	80/20	2.4251
957581	AF2-052 C	3.5405	80/20	3.5405
957681	AF2-062 C	10.9812	80/20	10.9812
959061	AF2-197 C O1	14.2789	80/20	14.2789

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959471	AF2-238 C	3.7598	80/20	3.7598
959481	AF2-239 C	3.6826	80/20	3.6826
959491	AF2-240 C	3.2334	80/20	3.2334
959501	AF2-241 C	3.3831	80/20	3.3831
959741	AF2-265 C	2.6946	80/20	2.6946
960031	AF2-294 C	1.1269	80/20	1.1269
960271	AF2-318 C	3.9812	80/20	3.9812
961141	AF2-405	2.9939	80/20	2.9939
961151	AF2-406	22.4542	80/20	22.4542
961201	AF2-411 O1	69.2130	80/20	69.2130
961211	AF2-412 O1	32.6820	80/20	32.6820
961451	AF2-436	0.2473	80/20	0.2473
WEC	WEC	0.2800	Confirmed LTF	0.2800
LGEE	LGEE	0.4872	Confirmed LTF	0.4872
CPL	CPL	0.3076	Confirmed LTF	0.3076
CBM-W2	CBM-W2	6.5602	Confirmed LTF	6.5602
CBM-W1	CBM-W1	11.6468	Confirmed LTF	11.6468
TVA	TVA	1.0416	Confirmed LTF	1.0416
CBM-S2	CBM-S2	3.1732	Confirmed LTF	3.1732
CBM-S1	CBM-S1	6.5093	Confirmed LTF	6.5093
MEC	MEC	1.3602	Confirmed LTF	1.3602

11.6.4 Index 4

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344822	200675	26E.TWANDA	PENELEC	130763	HILSD230	NYISO	1	PN-P1-2-PN-230-102T	single	531.0	105.34	107.89	DC	13.57

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200665	26SHAWVL 3	1.9270	80/20	1.9270
200666	26SHAWVL 4	1.8963	80/20	1.8963
200715	26SHAWVL 1	1.2128	80/20	1.2128
200722	26SHAWVL 2	1.2342	80/20	1.2342
200851	26MEHOOP3	3.5655	80/20	3.5655
200887	26ARMNA MT	0.3886	80/20	0.3886
200898	26AA1-106	5.4259	80/20	5.4259
200917	26MTNTP_P28	1.8129	80/20	1.8129
200949	26X1-109	56.5385	80/20	56.5385
203261	26BLOSSBCT	0.4103	80/20	0.4103
203283	26MANOR_T86	0.0757	80/20	0.0757
203347	26NME_Y1-047	1.2026	80/20	1.2026
203351	26GROZ1-110	0.9359	80/20	0.9359
203352	26CANZ2-011	0.9359	80/20	0.9359
203907	26Y2-042	6.5216	80/20	6.5216
203909	26Z1-038	6.9576	80/20	6.9576
203910	26Z1-091	3.4815	80/20	3.4815
917631	Z2-104	0.0984	80/20	0.0984
919201	AA1-144 OP	68.5480	80/20	68.5480
919491	AA2-000	80.6778	80/20	80.6778
920341	AA2-132 (Suspended)	1.7978	80/20	1.7978
920351	AA2-133	1.1766	80/20	1.1766
930511	AB1-092	2.9623	80/20	2.9623
934801	AD1-108	0.0705	80/20	0.0705
934811	AD1-109	0.0517	80/20	0.0517
934821	AD1-110	0.0906	80/20	0.0906
936421	AD2-055	6.0988	80/20	6.0988
939171	AE1-147 C	0.6720	80/20	0.6720
940201	AE2-001 C	0.6689	80/20	0.6689
941261	AE2-120 C	0.6671	80/20	0.6671
941271	AE2-121 C	0.3602	80/20	0.3602
941421	AE2-139 C	22.9894	80/20	22.9894
942351	AE2-248 C	0.5124	80/20	0.5124
942491	AE2-262 C	3.4715	80/20	3.4715
942501	AE2-263 C	3.2632	80/20	3.2632
943751	AF1-043	18.2962	80/20	18.2962
944001	AF1-068 C O1	0.6767	80/20	0.6767
944311	AF1-099 C	5.2697	80/20	5.2697
944321	AF1-100 C	10.2990	80/20	10.2990
944471	AF1-112 C	0.6889	80/20	0.6889
944671	AF1-132 C O1	0.6310	80/20	0.6310

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
944771	AF1-142 C	8.4316	80/20	8.4316
944841	AF1-149 C	0.6670	80/20	0.6670
945161	AF1-181	0.0520	80/20	0.0520
945171	AF1-182	0.2572	80/20	0.2572
945181	AF1-183	0.0576	80/20	0.0576
945331	AF1-198	0.3130	80/20	0.3130
945491	AF1-214 C	0.6672	80/20	0.6672
959061	AF2-197 C O1	13.5741	80/20	13.5741
959471	AF2-238 C	1.9980	80/20	1.9980
959481	AF2-239 C	3.7449	80/20	3.7449
959741	AF2-265 C	1.4319	80/20	1.4319
960031	AF2-294 C	1.0841	80/20	1.0841
960271	AF2-318 C	4.0486	80/20	4.0486
961451	AF2-436	0.5142	80/20	0.5142
961461	AF2-437	0.5346	80/20	0.5346
NEWTON	NEWTON	0.2181	Confirmed LTF	0.2181
FARMERCITY	FARMERCITY	0.0114	Confirmed LTF	0.0114
CALDERWOOD	CALDERWOOD	0.0984	Confirmed LTF	0.0984
NY	NY	1.7773	Confirmed LTF	1.7773
PRAIRIE	PRAIRIE	0.5218	Confirmed LTF	0.5218
CHEOAH	CHEOAH	0.0991	Confirmed LTF	0.0991
EDWARDS	EDWARDS	0.0714	Confirmed LTF	0.0714
TILTON	TILTON	0.1285	Confirmed LTF	0.1285
MADISON	MADISON	0.0020	Confirmed LTF	0.0020
GIBSON	GIBSON	0.1108	Confirmed LTF	0.1108
BLUEG	BLUEG	0.3524	Confirmed LTF	0.3524
TRIMBLE	TRIMBLE	0.1130	Confirmed LTF	0.1130
CATAWBA	CATAWBA	0.0679	Confirmed LTF	0.0679

11.6.5 Index 5

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344525	200676	26E.SAYRE	PENELEC	130836	N.WAV115	NYISO	1	PN-P1-2-PN-230-101T	single	128.0	108.37	113.28	DC	6.28

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200851	26MEHOOP3	0.7270	80/20	0.7270
200898	26AA1-106	1.2716	80/20	1.2716
200917	26MTNTP_P28	0.3696	80/20	0.3696
200949	26X1-109	14.2910	80/20	14.2910
203283	26MANOR_T86	0.0340	80/20	0.0340
203347	26NME_Y1-047	0.2452	80/20	0.2452
203350	26MILZ1-092	1.9559	80/20	1.9559
203351	26GROZ1-110	0.2193	80/20	0.2193
203352	26CANZ2-011	0.2193	80/20	0.2193
203907	26Y2-042	1.1253	80/20	1.1253
203909	26Z1-038	1.6097	80/20	1.6097
917631	Z2-104	0.0170	80/20	0.0170
919201	AA1-144 OP	17.2861	80/20	17.2861
920351	AA2-133	0.4137	80/20	0.4137
934801	AD1-108	0.0165	80/20	0.0165
934811	AD1-109	0.0121	80/20	0.0121
934821	AD1-110	0.0185	80/20	0.0185
935061	AD1-142	0.1081	80/20	0.1081
941421	AE2-139 C	5.7219	80/20	5.7219
944411	AF1-106 O1	11.3960	80/20	11.3960
946211	AF1-286 C O1	4.6154	80/20	4.6154
959061	AF2-197 C O1	6.2835	80/20	6.2835
959481	AF2-239 C	1.6834	80/20	1.6834
959491	AF2-240 C	6.1538	80/20	6.1538
959501	AF2-241 C	6.4387	80/20	6.4387
960271	AF2-318 C	1.8199	80/20	1.8199
961141	AF2-405	5.6980	80/20	5.6980
961151	AF2-406	42.7350	80/20	42.7350
961451	AF2-436	0.1808	80/20	0.1808
961461	AF2-437	0.0922	80/20	0.0922
NEWTON	NEWTON	0.4459	Confirmed LTF	0.4459
FARMERCITY	FARMERCITY	0.0230	Confirmed LTF	0.0230
G-007A	G-007A	2.1122	Confirmed LTF	2.1122
VFT	VFT	5.9856	Confirmed LTF	5.9856
CALDERWOOD	CALDERWOOD	0.1784	Confirmed LTF	0.1784
NY	NY	1.8620	Confirmed LTF	1.8620
PRAIRIE	PRAIRIE	1.0513	Confirmed LTF	1.0513
CHEOAH	CHEOAH	0.1787	Confirmed LTF	0.1787
EDWARDS	EDWARDS	0.1488	Confirmed LTF	0.1488
TILTON	TILTON	0.2671	Confirmed LTF	0.2671
MADISON	MADISON	0.0222	Confirmed LTF	0.0222

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
GIBSON	GIBSON	0.2277	Confirmed LTF	0.2277
BLUEG	BLUEG	0.7222	Confirmed LTF	0.7222
TRIMBLE	TRIMBLE	0.2315	Confirmed LTF	0.2315
CATAWBA	CATAWBA	0.1092	Confirmed LTF	0.1092

11.6.6 Index 6

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99343926	200708	26OXBOW	PENELEC	208009	LACK	PPL	1	AP-P2-2-WP-230-005T	bus	984.0	120.64	122.78	DC	46.43

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	11.5222	50/50	11.5222
200851	26MEHOOP3	5.8631	50/50	5.8631
200894	26K02	17.3483	Adder	20.41
200898	26AA1-106	6.5596	Adder	7.72
200917	26MTNTP_P28	2.9813	50/50	2.9813
200949	26X1-109	61.8419	50/50	61.8419
203283	26MANOR_T86	0.1048	50/50	0.1048
203347	26NME_Y1-047	1.9776	50/50	1.9776
203907	26Y2-042	12.3229	50/50	12.3229
203909	26Z1-038	11.5197	50/50	11.5197
203910	26Z1-091	9.5916	50/50	9.5916
203999	P-047 E	24.9012	Adder	29.3
235003	AC1-025 E	0.2051	Adder	0.24
236828	01GRAYMONT	0.5573	Adder	0.66
294573	P-028 E	69.1332	50/50	69.1332
916202	Z1-069 E	12.7129	Adder	14.96
917631	Z2-104	0.1858	50/50	0.1858
918682	AA1-082 E	26.9474	50/50	26.9474
919201	AA1-144 OP	64.0669	Adder	75.37
919491	AA2-000	101.7720	Adder	119.73
920341	AA2-132 (Suspended)	7.3849	Adder	8.69
920351	AA2-133	1.7724	50/50	1.7724
922932	AB1-082 OP (Suspended)	3.5528	Adder	4.18
923443	AB1-160 E	3.6323	Adder	4.27
930511	AB1-092	3.7368	Adder	4.4
934821	AD1-110	0.1491	50/50	0.1491
936421	AD2-055	7.6933	Adder	9.05
939171	AE1-147 C	1.6772	Adder	1.97
939172	AE1-147 E	1.1181	Adder	1.32
940201	AE2-001 C	1.6738	Adder	1.97
940202	AE2-001 E	1.1159	Adder	1.31
940681	AE2-055 C (Suspended)	1.6219	Adder	1.91
940682	AE2-055 E (Suspended)	1.0813	Adder	1.27
940861	AE2-074 C	2.6976	Adder	3.17
940862	AE2-074 E	3.5510	Adder	4.18
941191	AE2-113 C	8.5226	Adder	10.03
941192	AE2-113 E	9.1761	Adder	10.8
941261	AE2-120 C	1.6724	Adder	1.97
941262	AE2-120 E	1.1149	Adder	1.31
941271	AE2-121 C	0.8938	Adder	1.05

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941272	AE2-121 E	0.5968	Adder	0.7
941321	AE2-126 C	1.5042	Adder	1.77
941322	AE2-126 E	1.0028	Adder	1.18
941421	AE2-139 C	22.1140	Adder	26.02
941422	AE2-139 E	14.7426	Adder	17.34
942351	AE2-248 C	1.3168	Adder	1.55
942352	AE2-248 E	0.8779	Adder	1.03
942491	AE2-262 C	7.3483	Adder	8.65
942492	AE2-262 E	4.9380	Adder	5.81
942501	AE2-263 C	6.9074	Adder	8.13
942502	AE2-263 E	4.6118	Adder	5.43
943751	AF1-043	23.0800	Adder	27.15
944001	AF1-068 C O1	1.7469	Adder	2.06
944002	AF1-068 E O1	0.9826	Adder	1.16
944311	AF1-099 C	11.1546	Adder	13.12
944312	AF1-099 E	7.4364	Adder	8.75
944321	AF1-100 C	21.3766	Adder	25.15
944322	AF1-100 E	14.2511	Adder	16.77
944411	AF1-106 O1	6.6708	Adder	7.85
944471	AF1-112 C	1.7605	Adder	2.07
944472	AF1-112 E	0.9903	Adder	1.17
944671	AF1-132 C O1	1.6338	Adder	1.92
944672	AF1-132 E O1	1.0892	Adder	1.28
944771	AF1-142 C	17.8474	Adder	21.0
944772	AF1-142 E	11.8983	Adder	14.0
944841	AF1-149 C	1.6722	Adder	1.97
944842	AF1-149 E	1.1148	Adder	1.31
944881	AF1-153 C O1	1.4700	Adder	1.73
944882	AF1-153 E O1	0.9800	Adder	1.15
944901	AF1-155 C	1.4630	Adder	1.72
944902	AF1-155 E	0.9753	Adder	1.15
945161	AF1-181	0.1115	Adder	0.13
945171	AF1-182	0.5556	Adder	0.65
945181	AF1-183	0.1307	Adder	0.15
945331	AF1-198	0.7368	Adder	0.87
945491	AF1-214 C	1.6724	Adder	1.97
945492	AF1-214 E	1.1149	Adder	1.31
945551	AF1-220 C	11.6659	Adder	13.72
945552	AF1-220 E	7.7816	Adder	9.15
946111	AF1-276 C	8.6131	Adder	10.13
946112	AF1-276 E	4.2423	Adder	4.99
946121	AF1-277 C	8.6131	Adder	10.13
946122	AF1-277 E	4.2423	Adder	4.99
946131	AF1-278 C	6.8648	Adder	8.08
946132	AF1-278 E	3.4144	Adder	4.02
946211	AF1-286 C O1	2.7017	Adder	3.18
946212	AF1-286 E O1	1.8345	Adder	2.16
946421	AF1-306 C	6.4328	Adder	7.57
946422	AF1-306 E	25.7313	Adder	30.27
957451	AF2-039 C	0.5204	Adder	1.16
957452	AF2-039 E	0.3469	Adder	0.77
957581	AF2-052 C	2.7523	Adder	6.11

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957582	AF2-052 E	1.3390	Adder	2.97
957681	AF2-062 C	8.3004	Adder	18.42
957682	AF2-062 E	5.5336	Adder	12.28
957941	AF2-088 C	0.2506	Adder	0.56
957942	AF2-088 E	0.1670	Adder	0.37
959061	AF2-197 C O1	8.3668	Adder	18.57
959062	AF2-197 E O1	12.5502	Adder	27.86
959471	AF2-238 C	2.0414	Adder	4.53
959472	AF2-238 E	1.3609	Adder	3.02
959481	AF2-239 C	5.1860	50/50	5.1860
959482	AF2-239 E	4.1582	50/50	4.1582
959491	AF2-240 C	1.9092	Adder	4.24
959492	AF2-240 E	1.6263	Adder	3.61
959501	AF2-241 C	1.9976	Adder	4.43
959502	AF2-241 E	1.5380	Adder	3.41
959741	AF2-265 C	1.4630	Adder	3.25
959742	AF2-265 E	1.0887	Adder	2.42
960022	AF2-293 E	0.0864	Adder	0.19
960031	AF2-294 C	2.3602	Adder	5.24
960032	AF2-294 E	1.5735	Adder	3.49
960041	AF2-295 C	0.7754	Adder	1.72
960042	AF2-295 E	0.5169	Adder	1.15
960271	AF2-318 C	5.6065	50/50	5.6065
960272	AF2-318 E	3.7377	50/50	3.7377
961141	AF2-405	1.7678	Adder	3.92
961151	AF2-406	13.2582	Adder	29.43
961201	AF2-411 O1	40.7423	Adder	90.44
961211	AF2-412 O1	19.1215	Adder	42.45
961451	AF2-436	0.7745	50/50	0.7745
961461	AF2-437	1.0101	50/50	1.0101
WEC	WEC	0.4864	Confirmed LTF	0.4864
LGEE	LGEE	0.8472	Confirmed LTF	0.8472
CPL	CPL	0.5431	Confirmed LTF	0.5431
CBM-W2	CBM-W2	11.4250	Confirmed LTF	11.4250
CBM-W1	CBM-W1	20.2287	Confirmed LTF	20.2287
TVA	TVA	1.8158	Confirmed LTF	1.8158
O-066	O-066	36.2611	Confirmed LTF	36.2611
CBM-S2	CBM-S2	5.5777	Confirmed LTF	5.5777
CBM-S1	CBM-S1	11.3486	Confirmed LTF	11.3486
G-007	G-007	5.2260	Confirmed LTF	5.2260
MEC	MEC	2.3644	Confirmed LTF	2.3644

11.6.7 Index 7

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344367	200767	26HOMER CT	PENELEC	200793	26SEWARD 2	PENELEC	1	PN-P2-3-PN-230-9G-A	breaker	813.0	106.65	107.18	DC	9.54

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200809	26SITHE	2.1503	50/50	2.1503
200823	26MHP_X3-003	1.1959	Adder	1.41
200832	26HNSMLK 5	1.2482	50/50	1.2482
200837	26HOMER C1	37.0333	50/50	37.0333
200838	26HOMER C2	30.2493	50/50	30.2493
200839	26HOMER C3	32.0228	50/50	32.0228
200894	26K02	3.6447	Adder	4.29
200898	26AA1-106	1.6144	Adder	1.9
201477	26Y2-055	2.5540	Adder	3.0
203349	26Z1-069 C	0.3309	50/50	0.3309
203909	26Z1-038	1.1785	Adder	1.39
203910	26Z1-091	1.6199	Adder	1.91
203999	P-047 E	8.7625	Adder	10.31
294573	P-028 E	7.1757	Adder	8.44
915951	Y3-092 FTIR	75.4500	Merchant Transmission	75.4500
916202	Z1-069 E	8.1773	50/50	8.1773
917672	Z2-108 E	-1.3354	Adder	-1.57
917673	Z2-108 BAT	1.5710	Merchant Transmission	1.5710
918682	AA1-082 E	4.3601	Adder	5.13
919201	AA1-144 OP	12.2631	Adder	14.43
919491	AA2-000	24.3962	Adder	28.7
920341	AA2-132 (Suspended)	1.8273	Adder	2.15
922932	AB1-082 OP (Suspended)	2.9173	50/50	2.9173
923442	AB1-160 C	0.0945	50/50	0.0945
923443	AB1-160 E	2.3364	50/50	2.3364
930511	AB1-092	0.8958	Adder	1.05
936421	AD2-055	1.8442	Adder	2.17
938352	AE1-053 BAT	0.8728	Merchant Transmission	0.8728
938882	AE1-116 BAT	0.9130	Merchant Transmission	0.9130
938951	AE1-123	0.9654	Adder	1.14
939291	AE1-160 C	0.8635	Adder	1.02
939292	AE1-160 E	0.4963	Adder	0.58
940861	AE2-074 C	2.2151	50/50	2.2151
940862	AE2-074 E	2.9159	50/50	2.9159
941191	AE2-113 C	6.2564	Adder	7.36
941192	AE2-113 E	6.7362	Adder	7.92
941321	AE2-126 C	0.5663	Adder	0.67
941322	AE2-126 E	0.3775	Adder	0.44
941421	AE2-139 C	4.3577	Adder	5.13
941422	AE2-139 E	2.9051	Adder	3.42

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942811	AE2-299 C	2.4488	Adder	2.88
942812	AE2-299 E	9.7953	Adder	11.52
942961	AE2-316 C	2.9564	Adder	3.48
942962	AE2-316 E	4.2159	Adder	4.96
943151	AE2-344 C	5.1608	Adder	6.07
943152	AE2-344 E	3.4405	Adder	4.05
943351	AF1-006 C	0.8993	Adder	1.06
943352	AF1-006 E	0.5059	Adder	0.6
943751	AF1-043	5.5326	Adder	6.51
944261	AF1-094 C	0.8490	Adder	1.0
944262	AF1-094 E	0.5660	Adder	0.67
944281	AF1-096 C	0.8159	Adder	0.96
944282	AF1-096 E	0.5439	Adder	0.64
944301	AF1-098 C	3.6410	Adder	4.28
944302	AF1-098 E	2.4273	Adder	2.86
944381	AF1-103 O1	1.7609	Adder	2.07
944391	AF1-104 O1	1.3374	Adder	1.57
944411	AF1-106 O1	1.9885	Adder	2.34
944881	AF1-153 C O1	0.6980	Adder	0.82
944882	AF1-153 E O1	0.4653	Adder	0.55
944901	AF1-155 C	0.7001	Adder	0.82
944902	AF1-155 E	0.4668	Adder	0.55
945021	AF1-167 C	0.5239	Adder	0.62
945022	AF1-167 E	0.3499	Adder	0.41
945051	AF1-170 C	3.2683	Adder	3.85
945052	AF1-170 E	2.1789	Adder	2.56
945121	AF1-177	0.4402	Adder	0.52
945331	AF1-198	0.2611	Adder	0.31
945451	AF1-210 C	0.5905	Adder	0.69
945452	AF1-210 E	0.3937	Adder	0.46
945551	AF1-220 C	5.7533	Adder	6.77
945552	AF1-220 E	3.8376	Adder	4.51
945673	AF1-232 BAT	2.0274	Merchant Transmission	2.0274
946111	AF1-276 C	9.9193	50/50	9.9193
946112	AF1-276 E	4.8856	50/50	4.8856
946121	AF1-277 C	9.9193	50/50	9.9193
946122	AF1-277 E	4.8856	50/50	4.8856
946131	AF1-278 C	7.9059	50/50	7.9059
946132	AF1-278 E	3.9322	50/50	3.9322
946211	AF1-286 C O1	0.8053	Adder	0.95
946212	AF1-286 E O1	0.5468	Adder	0.64
946221	AF1-287 C	0.8900	Adder	1.05
946222	AF1-287 E	0.5933	Adder	0.7
946381	AF1-302 C	1.2910	Adder	1.52
946382	AF1-302 E	1.7214	Adder	2.03
946401	AF1-304 C	4.0443	Adder	4.76
946402	AF1-304 E	2.6962	Adder	3.17
946421	AF1-306 C	2.9044	Adder	3.42
946422	AF1-306 E	11.6177	Adder	13.67
946771	AF1-217 C O2	0.8900	Adder	1.05
946772	AF1-217 E O2	0.5933	Adder	0.7
957161	AF2-010 C	1.7219	Adder	3.82

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957162	AF2-010 E	1.1604	Adder	2.58
957513	AF2-045 BAT	0.9480	Merchant Transmission	0.9480
957571	AF2-051 C O1	1.4415	Adder	3.2
957572	AF2-051 E O1	0.7426	Adder	1.65
957581	AF2-052 C	5.1682	50/50	5.1682
957582	AF2-052 E	2.5142	50/50	2.5142
957681	AF2-062 C	18.4584	50/50	18.4584
957682	AF2-062 E	12.3056	50/50	12.3056
957951	AF2-089 C	0.1189	Adder	0.26
957952	AF2-089 E	0.0613	Adder	0.14
958031	AF2-097 C	0.1117	Adder	0.25
958032	AF2-097 E	0.0745	Adder	0.17
958361	AF2-130 C	0.3810	Adder	0.85
958362	AF2-130 E	0.2540	Adder	0.56
958472	AF2-141 BAT	0.9252	Merchant Transmission	0.9252
958731	AF2-164 C O1	2.9249	Adder	6.49
958732	AF2-164 E O1	1.9499	Adder	4.33
958741	AF2-165 C	0.4319	Adder	0.96
958742	AF2-165 E	0.2879	Adder	0.64
958751	AF2-166 C	0.3810	Adder	0.85
958752	AF2-166 E	0.2540	Adder	0.56
958791	AF2-170 C	0.4253	Adder	0.94
958792	AF2-170 E	0.2835	Adder	0.63
959061	AF2-197 C O1	1.7185	Adder	3.81
959062	AF2-197 E O1	2.5778	Adder	5.72
959441	AF2-235 C	0.2162	Adder	0.48
959442	AF2-235 E	0.1441	Adder	0.32
959461	AF2-237 C	0.2250	Adder	0.5
959462	AF2-237 E	0.1500	Adder	0.33
959471	AF2-238 C	0.6388	Adder	1.42
959472	AF2-238 E	0.4259	Adder	0.95
959481	AF2-239 C	0.4662	Adder	1.03
959482	AF2-239 E	0.3738	Adder	0.83
959491	AF2-240 C	0.5691	Adder	1.26
959492	AF2-240 E	0.4848	Adder	1.08
959501	AF2-241 C	0.5955	Adder	1.32
959502	AF2-241 E	0.4584	Adder	1.02
959521	AF2-243 C	0.3239	Adder	0.72
959522	AF2-243 E	0.2159	Adder	0.48
959741	AF2-265 C	0.4578	Adder	1.02
959742	AF2-265 E	0.3407	Adder	0.76
959793	AF2-270 BAT	0.0805	Merchant Transmission	0.0805
959822	AF2-273 E	0.1241	Adder	0.28
960031	AF2-294 C	0.5840	Adder	1.3
960032	AF2-294 E	0.3893	Adder	0.86
960041	AF2-295 C	0.3711	Adder	0.82
960042	AF2-295 E	0.2474	Adder	0.55
960271	AF2-318 C	0.5039	Adder	1.12
960272	AF2-318 E	0.3360	Adder	0.75
960321	AF2-323 C O1	1.1578	Adder	2.57
960322	AF2-323 E O1	0.7719	Adder	1.71
961141	AF2-405	0.5269	Adder	1.17

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961151	AF2-406	3.9521	Adder	8.77
961201	AF2-411 O1	47.5800	50/50	47.5800
961211	AF2-412 O1	18.4457	50/50	18.4457
961451	AF2-436	0.0560	Adder	0.12
WEC	WEC	0.0400	Confirmed LTF	0.0400
LGEE	LGEE	0.0377	Confirmed LTF	0.0377
CALDERWOOD	CALDERWOOD	0.0537	Confirmed LTF	0.0537
CBM-W2	CBM-W2	0.1310	Confirmed LTF	0.1310
CBM-W1	CBM-W1	2.6271	Confirmed LTF	2.6271
O-066	O-066	4.4621	Confirmed LTF	4.4621
CHEOAH	CHEOAH	0.0566	Confirmed LTF	0.0566
G-007	G-007	0.7634	Confirmed LTF	0.7634
MEC	MEC	0.1351	Confirmed LTF	0.1351
CATAWBA	CATAWBA	0.0851	Confirmed LTF	0.0851

11.6.8 Index 8

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344208	200769	26HOMER CY	PENELEC	999391	26HOMER CT	PENELEC	S	PN-P2-3-PN-230-9I	breaker	824.0	142.62	143.59	DC	17.83

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	2.2581	Adder	2.66
200831	26HNSMLK 4	2.3062	50/50	2.3062
200832	26HNSMLK 5	2.3062	50/50	2.3062
200838	26HOMER C2	55.4360	50/50	55.4360
200839	26HOMER C3	58.6863	50/50	58.6863
200894	26K02	6.8734	Adder	8.09
200898	26AA1-106	3.0195	Adder	3.55
201477	26Y2-055	4.7528	Adder	5.59
203349	26Z1-069 C	0.6127	50/50	0.6127
203907	26Y2-042	1.4740	Adder	1.73
203909	26Z1-038	2.2258	Adder	2.62
203910	26Z1-091	3.0268	Adder	3.56
203999	P-047 E	16.2571	Adder	19.13
294573	P-028 E	13.5487	Adder	15.94
915951	Y3-092 FTIR	139.7900	Merchant Transmission	139.7900
916202	Z1-069 E	15.1417	50/50	15.1417
917672	Z2-108 E	-1.9050	Adder	-2.24
917673	Z2-108 BAT	2.2412	Merchant Transmission	2.2412
918682	AA1-082 E	8.1675	Adder	9.61
919201	AA1-144 OP	22.9771	Adder	27.03
919491	AA2-000	46.5097	Adder	54.72
920341	AA2-132 (Suspended)	3.4030	Adder	4.0
922932	AB1-082 OP (Suspended)	5.4021	50/50	5.4021
923442	AB1-160 C	0.1750	50/50	0.1750
923443	AB1-160 E	4.3262	50/50	4.3262
930511	AB1-092	1.7077	Adder	2.01
936421	AD2-055	3.5159	Adder	4.14
938352	AE1-053 BAT	1.2451	Merchant Transmission	1.2451
938882	AE1-116 BAT	1.2997	Merchant Transmission	1.2997
938951	AE1-123	1.9425	Adder	2.29
939291	AE1-160 C	1.6510	Adder	1.94
939292	AE1-160 E	0.9490	Adder	1.12
940861	AE2-074 C	4.1018	50/50	4.1018
940862	AE2-074 E	5.3993	50/50	5.3993
941191	AE2-113 C	11.6833	Adder	13.75
941192	AE2-113 E	12.5792	Adder	14.8
941321	AE2-126 C	1.1273	Adder	1.33
941322	AE2-126 E	0.7515	Adder	0.88
941421	AE2-139 C	8.1793	Adder	9.62
941422	AE2-139 E	5.4528	Adder	6.42
942811	AE2-299 C	4.5446	Adder	5.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942812	AE2-299 E	18.1783	Adder	21.39
942961	AE2-316 C	5.5688	Adder	6.55
942962	AE2-316 E	7.9411	Adder	9.34
943151	AE2-344 C	9.5937	Adder	11.29
943152	AE2-344 E	6.3958	Adder	7.52
943351	AF1-006 C	1.6703	Adder	1.97
943352	AF1-006 E	0.9395	Adder	1.11
943751	AF1-043	10.5476	Adder	12.41
944261	AF1-094 C	1.5943	Adder	1.88
944262	AF1-094 E	1.0628	Adder	1.25
944281	AF1-096 C	1.5600	Adder	1.84
944282	AF1-096 E	1.0400	Adder	1.22
944301	AF1-098 C	6.7671	Adder	7.96
944302	AF1-098 E	4.5114	Adder	5.31
944321	AF1-100 C	11.7325	Adder	13.8
944322	AF1-100 E	7.8217	Adder	9.2
944381	AF1-103 O1	3.2766	Adder	3.85
944391	AF1-104 O1	2.4806	Adder	2.92
944411	AF1-106 O1	3.6963	Adder	4.35
944881	AF1-153 C O1	1.3320	Adder	1.57
944882	AF1-153 E O1	0.8880	Adder	1.04
944901	AF1-155 C	1.3359	Adder	1.57
944902	AF1-155 E	0.8906	Adder	1.05
945021	AF1-167 C	1.0020	Adder	1.18
945022	AF1-167 E	0.6692	Adder	0.79
945051	AF1-170 C	6.0691	Adder	7.14
945052	AF1-170 E	4.0460	Adder	4.76
945121	AF1-177	0.8191	Adder	0.96
945161	AF1-181	0.0611	Adder	0.07
945171	AF1-182	0.3051	Adder	0.36
945331	AF1-198	0.4849	Adder	0.57
945451	AF1-210 C	1.1249	Adder	1.32
945452	AF1-210 E	0.7499	Adder	0.88
945551	AF1-220 C	11.0386	Adder	12.99
945552	AF1-220 E	7.3631	Adder	8.66
945673	AF1-232 BAT	2.8870	Merchant Transmission	2.8870
946111	AF1-276 C	18.3526	50/50	18.3526
946112	AF1-276 E	9.0394	50/50	9.0394
946121	AF1-277 C	18.3526	50/50	18.3526
946122	AF1-277 E	9.0394	50/50	9.0394
946131	AF1-278 C	14.6273	50/50	14.6273
946132	AF1-278 E	7.2753	50/50	7.2753
946211	AF1-286 C O1	1.4970	Adder	1.76
946212	AF1-286 E O1	1.0165	Adder	1.2
946221	AF1-287 C	1.6546	Adder	1.95
946222	AF1-287 E	1.1031	Adder	1.3
946381	AF1-302 C	2.4318	Adder	2.86
946382	AF1-302 E	3.2424	Adder	3.81
946401	AF1-304 C	7.7632	Adder	9.13
946402	AF1-304 E	5.1755	Adder	6.09
946421	AF1-306 C	5.5327	Adder	6.51
946422	AF1-306 E	22.1309	Adder	26.04

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946771	AF1-217 C O2	1.6546	Adder	1.95
946772	AF1-217 E O2	1.1031	Adder	1.3
957161	AF2-010 C	3.2357	Adder	7.18
957162	AF2-010 E	2.1806	Adder	4.84
957513	AF2-045 BAT	1.3018	Merchant Transmission	1.3018
957571	AF2-051 C O1	2.6844	Adder	5.96
957572	AF2-051 E O1	1.3829	Adder	3.07
957581	AF2-052 C	9.5900	50/50	9.5900
957582	AF2-052 E	4.6654	50/50	4.6654
957681	AF2-062 C	34.1280	50/50	34.1280
957682	AF2-062 E	22.7520	50/50	22.7520
957951	AF2-089 C	0.2274	Adder	0.5
957952	AF2-089 E	0.1171	Adder	0.26
958031	AF2-097 C	0.2075	Adder	0.46
958032	AF2-097 E	0.1383	Adder	0.31
958361	AF2-130 C	0.7498	Adder	1.66
958362	AF2-130 E	0.4999	Adder	1.11
958472	AF2-141 BAT	1.3198	Merchant Transmission	1.3198
958731	AF2-164 C O1	5.4038	Adder	12.0
958732	AF2-164 E O1	3.6026	Adder	8.0
958741	AF2-165 C	0.8318	Adder	1.85
958742	AF2-165 E	0.5545	Adder	1.23
958751	AF2-166 C	0.7498	Adder	1.66
958752	AF2-166 E	0.4999	Adder	1.11
958791	AF2-170 C	0.7888	Adder	1.75
958792	AF2-170 E	0.5259	Adder	1.17
959061	AF2-197 C O1	3.2132	Adder	7.13
959062	AF2-197 E O1	4.8199	Adder	10.7
959441	AF2-235 C	0.4134	Adder	0.92
959442	AF2-235 E	0.2756	Adder	0.61
959461	AF2-237 C	0.4225	Adder	0.94
959462	AF2-237 E	0.2817	Adder	0.63
959471	AF2-238 C	1.1875	Adder	2.64
959472	AF2-238 E	0.7917	Adder	1.76
959481	AF2-239 C	0.8719	Adder	1.94
959482	AF2-239 E	0.6991	Adder	1.55
959491	AF2-240 C	1.0579	Adder	2.35
959492	AF2-240 E	0.9012	Adder	2.0
959501	AF2-241 C	1.1069	Adder	2.46
959502	AF2-241 E	0.8522	Adder	1.89
959521	AF2-243 C	0.6238	Adder	1.38
959522	AF2-243 E	0.4159	Adder	0.92
959741	AF2-265 C	0.8511	Adder	1.89
959742	AF2-265 E	0.6334	Adder	1.41
959793	AF2-270 BAT	0.1146	Merchant Transmission	0.1146
959822	AF2-273 E	0.2368	Adder	0.53
960031	AF2-294 C	1.0876	Adder	2.41
960032	AF2-294 E	0.7251	Adder	1.61
960041	AF2-295 C	0.7080	Adder	1.57
960042	AF2-295 E	0.4720	Adder	1.05
960271	AF2-318 C	0.9426	Adder	2.09
960272	AF2-318 E	0.6284	Adder	1.39

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960321	AF2-323 C O1	2.1565	Adder	4.79
960322	AF2-323 E O1	1.4376	Adder	3.19
960891	AF2-380 C	0.3777	Adder	0.84
960892	AF2-380 E	0.2518	Adder	0.56
961141	AF2-405	0.9795	Adder	2.17
961151	AF2-406	7.3464	Adder	16.31
961201	AF2-411 O1	87.8850	50/50	87.8850
961211	AF2-412 O1	34.1484	50/50	34.1484
961451	AF2-436	0.1051	Adder	0.23
961461	AF2-437	0.0640	Adder	0.14
WEC	WEC	0.0825	Confirmed LTF	0.0825
LGEE	LGEE	0.0884	Confirmed LTF	0.0884
CALDERWOOD	CALDERWOOD	0.0611	Confirmed LTF	0.0611
CBM-W2	CBM-W2	0.6552	Confirmed LTF	0.6552
CBM-W1	CBM-W1	5.1291	Confirmed LTF	5.1291
O-066	O-066	4.6435	Confirmed LTF	4.6435
CHEOAH	CHEOAH	0.0656	Confirmed LTF	0.0656
G-007	G-007	0.8476	Confirmed LTF	0.8476
MEC	MEC	0.3067	Confirmed LTF	0.3067
CATAWBA	CATAWBA	0.1176	Confirmed LTF	0.1176

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344138	200769	26HOMER CY	PENELEC	999392	26HOMER CT	PENELEC	N	PN-P2-3-PN-230-9E	breaker	807.0	162.14	163.13	DC	17.85

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	2.2564	Adder	2.65
200831	26HNSMLK 4	2.3113	50/50	2.3113
200832	26HNSMLK 5	2.3113	50/50	2.3113
200838	26HOMER C2	55.6552	50/50	55.6552
200839	26HOMER C3	58.9184	50/50	58.9184
200894	26K02	6.8715	Adder	8.08
200898	26AA1-106	3.0222	Adder	3.56
201477	26Y2-055	4.7584	Adder	5.6
203349	26Z1-069 C	0.6141	50/50	0.6141
203907	26Y2-042	1.4692	Adder	1.73
203909	26Z1-038	2.2240	Adder	2.62
203910	26Z1-091	3.0293	Adder	3.56
203999	P-047 E	16.2899	Adder	19.16
294573	P-028 E	13.5385	Adder	15.93
915951	Y3-092 FTIR	139.7200	Merchant Transmission	139.7200
916202	Z1-069 E	15.1780	50/50	15.1780
917672	Z2-108 E	-1.9286	Adder	-2.27
917673	Z2-108 BAT	2.2689	Merchant Transmission	2.2689
918682	AA1-082 E	8.1714	Adder	9.61
919201	AA1-144 OP	22.9896	Adder	27.05
919491	AA2-000	46.4350	Adder	54.63
920341	AA2-132 (Suspended)	3.4075	Adder	4.01
922932	AB1-082 OP (Suspended)	5.4154	50/50	5.4154
923442	AB1-160 C	0.1755	50/50	0.1755
923443	AB1-160 E	4.3366	50/50	4.3366
930511	AB1-092	1.7050	Adder	2.01
936421	AD2-055	3.5102	Adder	4.13
938352	AE1-053 BAT	1.2605	Merchant Transmission	1.2605
938882	AE1-116 BAT	1.3145	Merchant Transmission	1.3145
938951	AE1-123	1.9403	Adder	2.28
939291	AE1-160 C	1.6511	Adder	1.94
939292	AE1-160 E	0.9491	Adder	1.12
940861	AE2-074 C	4.1119	50/50	4.1119
940862	AE2-074 E	5.4127	50/50	5.4127
941191	AE2-113 C	11.7035	Adder	13.77
941192	AE2-113 E	12.6009	Adder	14.82
941321	AE2-126 C	1.1250	Adder	1.32
941322	AE2-126 E	0.7500	Adder	0.88
941421	AE2-139 C	8.1818	Adder	9.63
941422	AE2-139 E	5.4546	Adder	6.42
942811	AE2-299 C	4.5470	Adder	5.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942812	AE2-299 E	18.1881	Adder	21.4
942961	AE2-316 C	5.5705	Adder	6.55
942962	AE2-316 E	7.9436	Adder	9.35
943151	AE2-344 C	9.5973	Adder	11.29
943152	AE2-344 E	6.3982	Adder	7.53
943351	AF1-006 C	1.6704	Adder	1.97
943352	AF1-006 E	0.9396	Adder	1.11
943751	AF1-043	10.5306	Adder	12.39
944261	AF1-094 C	1.5946	Adder	1.88
944262	AF1-094 E	1.0630	Adder	1.25
944281	AF1-096 C	1.5601	Adder	1.84
944282	AF1-096 E	1.0401	Adder	1.22
944301	AF1-098 C	6.7704	Adder	7.97
944302	AF1-098 E	4.5136	Adder	5.31
944321	AF1-100 C	11.6905	Adder	13.75
944322	AF1-100 E	7.7936	Adder	9.17
944381	AF1-103 O1	3.2805	Adder	3.86
944391	AF1-104 O1	2.4801	Adder	2.92
944411	AF1-106 O1	3.7024	Adder	4.36
944881	AF1-153 C O1	1.3309	Adder	1.57
944882	AF1-153 E O1	0.8873	Adder	1.04
944901	AF1-155 C	1.3348	Adder	1.57
944902	AF1-155 E	0.8898	Adder	1.05
945021	AF1-167 C	1.0018	Adder	1.18
945022	AF1-167 E	0.6691	Adder	0.79
945051	AF1-170 C	6.0699	Adder	7.14
945052	AF1-170 E	4.0466	Adder	4.76
945121	AF1-177	0.8201	Adder	0.96
945161	AF1-181	0.0609	Adder	0.07
945171	AF1-182	0.3039	Adder	0.36
945331	AF1-198	0.4858	Adder	0.57
945451	AF1-210 C	1.1243	Adder	1.32
945452	AF1-210 E	0.7495	Adder	0.88
945551	AF1-220 C	11.0348	Adder	12.98
945552	AF1-220 E	7.3605	Adder	8.66
945673	AF1-232 BAT	2.9200	Merchant Transmission	2.9200
946111	AF1-276 C	18.3982	50/50	18.3982
946112	AF1-276 E	9.0618	50/50	9.0618
946121	AF1-277 C	18.3982	50/50	18.3982
946122	AF1-277 E	9.0618	50/50	9.0618
946131	AF1-278 C	14.6636	50/50	14.6636
946132	AF1-278 E	7.2934	50/50	7.2934
946211	AF1-286 C O1	1.4995	Adder	1.76
946212	AF1-286 E O1	1.0182	Adder	1.2
946221	AF1-287 C	1.6553	Adder	1.95
946222	AF1-287 E	1.1035	Adder	1.3
946381	AF1-302 C	2.4325	Adder	2.86
946382	AF1-302 E	3.2434	Adder	3.82
946401	AF1-304 C	7.7637	Adder	9.13
946402	AF1-304 E	5.1758	Adder	6.09
946421	AF1-306 C	5.5281	Adder	6.5
946422	AF1-306 E	22.1124	Adder	26.01

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946771	AF1-217 C O2	1.6553	Adder	1.95
946772	AF1-217 E O2	1.1035	Adder	1.3
957161	AF2-010 C	3.2363	Adder	7.18
957162	AF2-010 E	2.1810	Adder	4.84
957513	AF2-045 BAT	1.3172	Merchant Transmission	1.3172
957571	AF2-051 C O1	2.6870	Adder	5.96
957572	AF2-051 E O1	1.3842	Adder	3.07
957581	AF2-052 C	9.6122	50/50	9.6122
957582	AF2-052 E	4.6762	50/50	4.6762
957681	AF2-062 C	34.2168	50/50	34.2168
957682	AF2-062 E	22.8112	50/50	22.8112
957951	AF2-089 C	0.2274	Adder	0.5
957952	AF2-089 E	0.1171	Adder	0.26
958031	AF2-097 C	0.2075	Adder	0.46
958032	AF2-097 E	0.1383	Adder	0.31
958361	AF2-130 C	0.7494	Adder	1.66
958362	AF2-130 E	0.4996	Adder	1.11
958472	AF2-141 BAT	1.3361	Merchant Transmission	1.3361
958731	AF2-164 C O1	5.4157	Adder	12.02
958732	AF2-164 E O1	3.6105	Adder	8.01
958741	AF2-165 C	0.8318	Adder	1.85
958742	AF2-165 E	0.5545	Adder	1.23
958751	AF2-166 C	0.7494	Adder	1.66
958752	AF2-166 E	0.4996	Adder	1.11
958791	AF2-170 C	0.7887	Adder	1.75
958792	AF2-170 E	0.5258	Adder	1.17
959061	AF2-197 C O1	3.2158	Adder	7.14
959062	AF2-197 E O1	4.8237	Adder	10.71
959441	AF2-235 C	0.4134	Adder	0.92
959442	AF2-235 E	0.2756	Adder	0.61
959461	AF2-237 C	0.4226	Adder	0.94
959462	AF2-237 E	0.2817	Adder	0.63
959471	AF2-238 C	1.1896	Adder	2.64
959472	AF2-238 E	0.7931	Adder	1.76
959481	AF2-239 C	0.8726	Adder	1.94
959482	AF2-239 E	0.6996	Adder	1.55
959491	AF2-240 C	1.0596	Adder	2.35
959492	AF2-240 E	0.9027	Adder	2.0
959501	AF2-241 C	1.1087	Adder	2.46
959502	AF2-241 E	0.8536	Adder	1.89
959521	AF2-243 C	0.6239	Adder	1.38
959522	AF2-243 E	0.4159	Adder	0.92
959741	AF2-265 C	0.8525	Adder	1.89
959742	AF2-265 E	0.6344	Adder	1.41
959793	AF2-270 BAT	0.1159	Merchant Transmission	0.1159
959822	AF2-273 E	0.2367	Adder	0.53
960031	AF2-294 C	1.0890	Adder	2.42
960032	AF2-294 E	0.7260	Adder	1.61
960041	AF2-295 C	0.7074	Adder	1.57
960042	AF2-295 E	0.4716	Adder	1.05
960271	AF2-318 C	0.9433	Adder	2.09
960272	AF2-318 E	0.6289	Adder	1.4

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960321	AF2-323 C O1	2.1585	Adder	4.79
960322	AF2-323 E O1	1.4390	Adder	3.19
960891	AF2-380 C	0.3764	Adder	0.84
960892	AF2-380 E	0.2509	Adder	0.56
961141	AF2-405	0.9811	Adder	2.18
961151	AF2-406	7.3586	Adder	16.33
961201	AF2-411 O1	88.1220	50/50	88.1220
961211	AF2-412 O1	34.2290	50/50	34.2290
961451	AF2-436	0.1051	Adder	0.23
961461	AF2-437	0.0638	Adder	0.14
WEC	WEC	0.0564	Confirmed LTF	0.0564
LGEE	LGEE	0.0405	Confirmed LTF	0.0405
CALDERWOOD	CALDERWOOD	0.1039	Confirmed LTF	0.1039
CBM-W1	CBM-W1	4.1033	Confirmed LTF	4.1033
O-066	O-066	5.2416	Confirmed LTF	5.2416
CHEOAH	CHEOAH	0.1081	Confirmed LTF	0.1081
G-007	G-007	0.9412	Confirmed LTF	0.9412
MEC	MEC	0.1732	Confirmed LTF	0.1732
CATAWBA	CATAWBA	0.1481	Confirmed LTF	0.1481

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344108	200795	26SHELOCTA	PENELEC	200810	26KEYSTONE	PENELEC	1	ATSI-P2-3-CEI-345-004D	breaker	917.0	189.03	189.77	DC	14.75

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200636	26IUP CO-G	0.7309	50/50	0.7309
200794	26CONEMAGH	0.4993	50/50	0.4993
200805	26COLVER13 (Deactivation : 01/09/2020)	29.3843	50/50	29.3843
200809	26SITHE	2.2832	50/50	2.2832
200833	26SEWRDB34	24.0546	50/50	24.0546
200837	26HOMER C1	39.3219	50/50	39.3219
200838	26HOMER C2	34.1161	50/50	34.1161
200839	26HOMER C3	36.1164	50/50	36.1164
200846	26FORWARD	0.2706	50/50	0.2706
200864	K-013 E	6.2749	50/50	6.2749
200883	Q-053 E	9.9862	Adder	11.75
200888	26HIGHLAND	0.5912	50/50	0.5912
200894	26K02	7.1452	Adder	8.41
200898	26AA1-106	2.6743	Adder	3.15
200925	26R32	0.6821	50/50	0.6821
201477	26Y2-055	4.9421	Adder	5.81
202158	26CON.GEN1	0.1250	50/50	0.1250
203910	26Z1-091	2.4312	Adder	2.86
203999	P-047 E	12.4397	Adder	14.63
235003	AC1-025 E	0.1777	Adder	0.21
236828	01GRAYMONT	0.4827	Adder	0.57
290086	Q-036 E	7.3243	Adder	8.62
292350	K-023	5.7633	Adder	6.78
292542	L-013 1	5.6056	Adder	6.59
293301	N-039 E	13.1545	Adder	15.48
293393	V3-030E	6.1438	Adder	7.23
293432	R-040 E	0.3153	Adder	0.37
293603	O-018 E	13.7093	50/50	13.7093
293902	O-048 E	5.0451	Adder	5.94
294515	O38_P22	11.5102	Adder	13.54
294903	P-060 E	8.9489	Adder	10.53
296332	R-032 E	15.8184	50/50	15.8184
913142	Y1-033 E OP1	4.5943	Adder	5.41
915951	Y3-092 FTIR	216.0000	Merchant Transmission	216.0000
916202	Z1-069 E	9.9846	Adder	11.75
917672	Z2-108 E	3.1532	Adder	3.71
918682	AA1-082 E	6.9319	Adder	8.16
919201	AA1-144 OP	19.7240	Adder	23.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
919491	AA2-000	61.9605	Adder	72.89
920341	AA2-132 (Suspended)	2.6754	Adder	3.15
922932	AB1-082 OP (Suspended)	3.6694	Adder	4.32
923443	AB1-160 E	2.8527	Adder	3.36
930511	AB1-092	2.2750	Adder	2.68
935191	AD1-154	3.8233	Adder	4.5
936421	AD2-055	4.6838	Adder	5.51
936991	AD2-133 C	3.2959	Adder	3.88
936992	AD2-133 E	15.0752	Adder	17.74
938351	AE1-053	1.7518	Adder	2.06
938881	AE1-116	0.9335	Adder	1.1
938951	AE1-123	2.9365	Adder	3.45
938991	AE1-128 C	15.8502	Adder	18.65
938992	AE1-128 E	10.5668	Adder	12.43
939171	AE1-147 C	1.4523	Adder	1.71
939172	AE1-147 E	0.9682	Adder	1.14
939291	AE1-160 C	2.1456	Adder	2.52
939292	AE1-160 E	1.2333	Adder	1.45
940201	AE2-001 C	1.4499	Adder	1.71
940202	AE2-001 E	0.9666	Adder	1.14
940681	AE2-055 C (Suspended)	1.4141	Adder	1.66
940682	AE2-055 E (Suspended)	0.9428	Adder	1.11
940861	AE2-074 C	2.7861	Adder	3.28
940862	AE2-074 E	3.6675	Adder	4.31
941191	AE2-113 C	11.1012	Adder	13.06
941192	AE2-113 E	11.9524	Adder	14.06
941231	AE2-117 C	1.6666	Adder	1.96
941232	AE2-117 E	1.1111	Adder	1.31
941241	AE2-118 C	1.6666	Adder	1.96
941242	AE2-118 E	1.1111	Adder	1.31
941261	AE2-120 C	1.4486	Adder	1.7
941262	AE2-120 E	0.9657	Adder	1.14
941271	AE2-121 C	0.7743	Adder	0.91
941272	AE2-121 E	0.5170	Adder	0.61
941321	AE2-126 C	1.9222	Adder	2.26
941322	AE2-126 E	1.2815	Adder	1.51
941331	AE2-129 C	2.0674	Adder	2.43
941332	AE2-129 E	1.3783	Adder	1.62
941351	AE2-131 C	2.0674	Adder	2.43
941352	AE2-131 E	1.3783	Adder	1.62
941421	AE2-139 C	7.4309	Adder	8.74
941422	AE2-139 E	4.9540	Adder	5.83
942121	AE2-224 C	16.2642	50/50	16.2642
942122	AE2-224 E	10.8428	50/50	10.8428
942351	AE2-248 C	1.1433	Adder	1.35
942352	AE2-248 E	0.7622	Adder	0.9
942491	AE2-262 C	6.5458	Adder	7.7
942492	AE2-262 E	4.3988	Adder	5.18
942501	AE2-263 C	6.1531	Adder	7.24
942502	AE2-263 E	4.1082	Adder	4.83
942511	AE2-264 C	7.8026	Adder	9.18
942512	AE2-264 E	5.2017	Adder	6.12

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942811	AE2-299 C	5.2363	Adder	6.16
942812	AE2-299 E	20.9451	Adder	24.64
942961	AE2-316 C	6.1301	Adder	7.21
942962	AE2-316 E	8.7415	Adder	10.28
943151	AE2-344 C	12.0975	Adder	14.23
943152	AE2-344 E	8.0650	Adder	9.49
943351	AF1-006 C	2.1870	Adder	2.57
943352	AF1-006 E	1.2302	Adder	1.45
943711	AF1-039 C O1	1.2154	Adder	1.43
943712	AF1-039 E O1	0.8103	Adder	0.95
943751	AF1-043	14.0515	Adder	16.53
944001	AF1-068 C O1	1.5196	Adder	1.79
944002	AF1-068 E O1	0.8548	Adder	1.01
944181	AF1-086 C O1	4.2701	Adder	5.02
944182	AF1-086 E O1	18.5773	Adder	21.86
944261	AF1-094 C	1.9969	Adder	2.35
944262	AF1-094 E	1.3312	Adder	1.57
944281	AF1-096 C	2.0274	Adder	2.39
944282	AF1-096 E	1.3516	Adder	1.59
944301	AF1-098 C	7.9568	Adder	9.36
944302	AF1-098 E	5.3045	Adder	6.24
944311	AF1-099 C	9.9366	Adder	11.69
944312	AF1-099 E	6.6244	Adder	7.79
944321	AF1-100 C	21.1140	Adder	24.84
944322	AF1-100 E	14.0760	Adder	16.56
944381	AF1-103 O1	3.4080	Adder	4.01
944391	AF1-104 O1	3.5894	Adder	4.22
944411	AF1-106 O1	2.8975	Adder	3.41
944471	AF1-112 C	1.5285	Adder	1.8
944472	AF1-112 E	0.8598	Adder	1.01
944671	AF1-132 C O1	1.4221	Adder	1.67
944672	AF1-132 E O1	0.9481	Adder	1.12
944691	AF1-134 C O1	2.2431	Adder	2.64
944692	AF1-134 E O1	1.4954	Adder	1.76
944751	AF1-140 C	2.1234	Adder	2.5
944752	AF1-140 E	1.4156	Adder	1.67
944771	AF1-142 C	15.8986	Adder	18.7
944772	AF1-142 E	10.5990	Adder	12.47
944781	AF1-143 C	10.5106	Adder	12.37
944782	AF1-143 E	5.6056	Adder	6.59
944841	AF1-149 C	1.4485	Adder	1.7
944842	AF1-149 E	0.9657	Adder	1.14
944881	AF1-153 C O1	1.7741	Adder	2.09
944882	AF1-153 E O1	1.1827	Adder	1.39
944901	AF1-155 C	1.7742	Adder	2.09
944902	AF1-155 E	1.1828	Adder	1.39
945021	AF1-167 C	1.1249	Adder	1.32
945022	AF1-167 E	0.7513	Adder	0.88
945051	AF1-170 C	8.2473	Adder	9.7
945052	AF1-170 E	5.4982	Adder	6.47
945121	AF1-177	0.8520	Adder	1.0
945161	AF1-181	0.1132	Adder	0.13

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945171	AF1-182	0.5659	Adder	0.67
945181	AF1-183	0.1499	Adder	0.18
945331	AF1-198	0.3852	Adder	0.45
945451	AF1-210 C	1.2304	Adder	1.45
945452	AF1-210 E	0.8203	Adder	0.97
945491	AF1-214 C	1.4487	Adder	1.7
945492	AF1-214 E	0.9658	Adder	1.14
945551	AF1-220 C	14.6462	Adder	17.23
945552	AF1-220 E	9.7695	Adder	11.49
945671	AF1-232 C O2	21.9541	Adder	25.83
945672	AF1-232 E O2	11.8215	Adder	13.91
945751	AF1-240 C O1	2.2940	Adder	2.7
945752	AF1-240 E O1	1.5293	Adder	1.8
946071	AF1-272 C O1	22.7773	50/50	22.7773
946072	AF1-272 E O1	15.1848	50/50	15.1848
946081	AF1-273 C O1	10.7976	Adder	12.7
946082	AF1-273 E O1	7.1984	Adder	8.47
946111	AF1-276 C	12.8576	Adder	15.13
946112	AF1-276 E	6.3328	Adder	7.45
946121	AF1-277 C	12.8576	Adder	15.13
946122	AF1-277 E	6.3328	Adder	7.45
946131	AF1-278 C	10.2477	Adder	12.06
946132	AF1-278 E	5.0970	Adder	6.0
946211	AF1-286 C O1	1.1735	Adder	1.38
946212	AF1-286 E O1	0.7968	Adder	0.94
946221	AF1-287 C	2.0775	Adder	2.44
946222	AF1-287 E	1.3850	Adder	1.63
946381	AF1-302 C	2.6769	Adder	3.15
946382	AF1-302 E	3.5692	Adder	4.2
946401	AF1-304 C	10.1689	Adder	11.96
946402	AF1-304 E	6.7793	Adder	7.98
946421	AF1-306 C	7.4059	Adder	8.71
946422	AF1-306 E	29.6235	Adder	34.85
946431	AF1-307 C	10.4821	50/50	10.4821
946432	AF1-307 E	6.9881	50/50	6.9881
946571	AF1-321 C O1	3.2800	50/50	3.2800
946572	AF1-321 E O1	2.1866	50/50	2.1866
946771	AF1-217 C O2	2.0775	Adder	2.44
946772	AF1-217 E O2	1.3850	Adder	1.63
957001	AF2-001 C O1	3.2800	50/50	3.2800
957002	AF2-001 E O1	2.1866	50/50	2.1866
957011	AF2-002 C O1	1.6400	50/50	1.6400
957012	AF2-002 E O1	1.0933	50/50	1.0933
957161	AF2-010 C	4.0601	Adder	9.01
957162	AF2-010 E	2.7361	Adder	6.07
957451	AF2-039 C	0.6828	Adder	1.52
957452	AF2-039 E	0.4552	Adder	1.01
957512	AF2-045 E	2.1054	Adder	4.67
957561	AF2-050 C	8.1321	50/50	8.1321
957562	AF2-050 E	5.4214	50/50	5.4214
957571	AF2-051 C O1	3.1689	Adder	7.03
957572	AF2-051 E O1	1.6325	Adder	3.62

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957581	AF2-052 C	3.6694	Adder	8.15
957582	AF2-052 E	1.7851	Adder	3.96
957681	AF2-062 C	12.3878	Adder	27.5
957682	AF2-062 E	8.2586	Adder	18.33
957931	AF2-087 C	0.3080	Adder	0.68
957932	AF2-087 E	0.4241	Adder	0.94
957941	AF2-088 C	0.3288	Adder	0.73
957942	AF2-088 E	0.2192	Adder	0.49
957951	AF2-089 C	0.2955	Adder	0.66
957952	AF2-089 E	0.1522	Adder	0.34
957981	AF2-092 C	0.8375	Adder	1.86
957982	AF2-092 E	0.5583	Adder	1.24
958031	AF2-097 C	0.2717	Adder	0.6
958032	AF2-097 E	0.1811	Adder	0.4
958101	AF2-104 C	0.2639	Adder	0.59
958102	AF2-104 E	0.1759	Adder	0.39
958271	AF2-121 C	1.0957	Adder	2.43
958272	AF2-121 E	0.7305	Adder	1.62
958361	AF2-130 C	1.0593	Adder	2.35
958362	AF2-130 E	0.7062	Adder	1.57
958411	AF2-135 C	0.2785	Adder	0.62
958412	AF2-135 E	0.1857	Adder	0.41
958471	AF2-141	0.7427	Adder	1.65
958731	AF2-164 C O1	4.9949	Adder	11.09
958732	AF2-164 E O1	3.3300	Adder	7.39
958741	AF2-165 C	1.0893	Adder	2.42
958742	AF2-165 E	0.7262	Adder	1.61
958751	AF2-166 C	1.0593	Adder	2.35
958752	AF2-166 E	0.7062	Adder	1.57
958791	AF2-170 C	1.1414	Adder	2.53
958792	AF2-170 E	0.7609	Adder	1.69
959061	AF2-197 C O1	2.6587	Adder	5.9
959062	AF2-197 E O1	3.9880	Adder	8.85
959301	AF2-221 C	1.7042	50/50	1.7042
959302	AF2-221 E	2.3534	50/50	2.3534
959401	AF2-231 C	0.2208	Adder	0.49
959402	AF2-231 E	0.1472	Adder	0.33
959441	AF2-235 C	0.5372	Adder	1.19
959442	AF2-235 E	0.3582	Adder	0.8
959461	AF2-237 C	0.5292	Adder	1.17
959462	AF2-237 E	0.3528	Adder	0.78
959471	AF2-238 C	0.9386	Adder	2.08
959472	AF2-238 E	0.6257	Adder	1.39
959481	AF2-239 C	0.7226	Adder	1.6
959482	AF2-239 E	0.5794	Adder	1.29
959491	AF2-240 C	0.8293	Adder	1.84
959492	AF2-240 E	0.7064	Adder	1.57
959501	AF2-241 C	0.8677	Adder	1.93
959502	AF2-241 E	0.6680	Adder	1.48
959521	AF2-243 C	0.8169	Adder	1.81
959522	AF2-243 E	0.5446	Adder	1.21
959741	AF2-265 C	0.6727	Adder	1.49

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959742	AF2-265 E	0.5006	Adder	1.11
959792	AF2-270 E	0.4341	Adder	0.96
959802	AF2-271 E	0.3002	Adder	0.67
959822	AF2-273 E	0.2616	Adder	0.58
960022	AF2-293 E	0.0748	Adder	0.17
960031	AF2-294 C	0.8551	Adder	1.9
960032	AF2-294 E	0.5700	Adder	1.27
960041	AF2-295 C	0.9403	Adder	2.09
960042	AF2-295 E	0.6269	Adder	1.39
960051	AF2-296 C	1.1888	Adder	2.64
960052	AF2-296 E	0.7926	Adder	1.76
960211	AF2-312 C	1.2463	Adder	2.77
960212	AF2-312 E	0.8308	Adder	1.84
960271	AF2-318 C	0.7812	Adder	1.73
960272	AF2-318 E	0.5208	Adder	1.16
960321	AF2-323 C O1	2.5387	Adder	5.64
960322	AF2-323 E O1	1.6925	Adder	3.76
960391	AF2-330 C	5.5322	Adder	12.28
960392	AF2-330 E	2.4196	Adder	5.37
960451	AF2-336 C O1	1.3958	Adder	3.1
960452	AF2-336 E O1	0.9306	Adder	2.07
960461	AF2-337 C O1	1.3958	Adder	3.1
960462	AF2-337 E O1	0.9306	Adder	2.07
960471	AF2-338 C O1	1.3958	Adder	3.1
960472	AF2-338 E O1	0.9306	Adder	2.07
960481	AF2-339 C O1	1.3958	Adder	3.1
960482	AF2-339 E O1	0.9306	Adder	2.07
960901	AF2-381 C	21.8509	50/50	21.8509
960902	AF2-381 E	11.4991	50/50	11.4991
961141	AF2-405	0.7678	Adder	1.7
961151	AF2-406	5.7587	Adder	12.78
961201	AF2-411 O1	28.4018	Adder	63.05
961211	AF2-412 O1	11.4817	Adder	25.49
961451	AF2-436	0.0883	Adder	0.2
NEWTON	NEWTON	1.4033	Confirmed LTF	1.4033
FARMERCITY	FARMERCITY	0.0725	Confirmed LTF	0.0725
G-007A	G-007A	2.1458	Confirmed LTF	2.1458
VFT	VFT	6.2243	Confirmed LTF	6.2243
CALDERWOOD	CALDERWOOD	0.6118	Confirmed LTF	0.6118
PRAIRIE	PRAIRIE	3.3398	Confirmed LTF	3.3398
CHEOAH	CHEOAH	0.6151	Confirmed LTF	0.6151
EDWARDS	EDWARDS	0.4592	Confirmed LTF	0.4592
TILTON	TILTON	0.8285	Confirmed LTF	0.8285
MADISON	MADISON	0.0625	Confirmed LTF	0.0625
GIBSON	GIBSON	0.7158	Confirmed LTF	0.7158
BLUEG	BLUEG	2.2828	Confirmed LTF	2.2828
TRIMBLE	TRIMBLE	0.7324	Confirmed LTF	0.7324
CATAWBA	CATAWBA	0.4053	Confirmed LTF	0.4053

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344238	200810	26KEYSTONE	PENELEC	999401	KEYSTONE	PJM	4	PJM500_PN_P4-500-001D	breaker	635.0	141.91	142.55	DC	8.9

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200636	26IUP CO-G	0.5021	50/50	0.5021
200794	26CONEMAGH	0.3401	50/50	0.3401
200805	26COLVER13 (Deactivation : 01/09/2020)	19.4986	50/50	19.4986
200809	26SITHE	1.5787	50/50	1.5787
200833	26SEWRDB34	16.4203	50/50	16.4203
200837	26HOMER C1	27.1889	50/50	27.1889
200838	26HOMER C2	22.7783	50/50	22.7783
200839	26HOMER C3	24.1138	50/50	24.1138
200846	26FORWARD	0.1849	50/50	0.1849
200864	K-013 E	4.2867	50/50	4.2867
200883	Q-053 E	6.7034	Adder	7.89
200888	26HIGHLAND	0.4021	50/50	0.4021
200894	26K02	4.2797	Adder	5.03
200898	26AA1-106	1.6191	Adder	1.9
200906	26KEYSTN#3	0.8346	50/50	0.8346
200925	26R32	0.4640	50/50	0.4640
201477	26Y2-055	2.5158	Adder	2.96
202158	26CON.GEN1	0.0871	50/50	0.0871
202160	26CON.GEN2	0.0608	50/50	0.0608
203910	26Z1-091	1.4616	Adder	1.72
203999	P-047 E	7.6650	Adder	9.02
235003	AC1-025 E	0.1066	Adder	0.13
236828	01GRAYMONT	0.2892	Adder	0.34
290086	Q-036 E	4.7423	Adder	5.58
292350	K-023	3.9316	Adder	4.63
292542	L-013 1	3.8240	Adder	4.5
293301	N-039 E	8.9004	Adder	10.47
293393	V3-030E	4.0991	Adder	4.82
293432	R-040 E	0.2151	Adder	0.25
293603	O-018 E	9.3246	50/50	9.3246
293902	O-048 E	3.4416	Adder	4.05
294515	O38_P22	7.7878	Adder	9.16
294903	P-060 E	6.1011	Adder	7.18
296332	R-032 E	10.7592	50/50	10.7592
913142	Y1-033 E OP1	3.1285	Adder	3.68
916202	Z1-069 E	6.1111	Adder	7.19
917672	Z2-108 E	2.1510	Adder	2.53
918682	AA1-082 E	4.1676	Adder	4.9
919201	AA1-144 OP	11.8571	Adder	13.95
919491	AA2-000	36.9465	Adder	43.47

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
920341	AA2-132 (Suspended)	1.6179	Adder	1.9
922932	AB1-082 OP (Suspended)	2.2235	Adder	2.62
923443	AB1-160 E	1.7460	Adder	2.05
930511	AB1-092	1.3566	Adder	1.6
935191	AD1-154	2.3474	Adder	2.76
936421	AD2-055	2.7929	Adder	3.29
936991	AD2-133 C	2.1340	Adder	2.51
936992	AD2-133 E	9.7609	Adder	11.48
938351	AE1-053	1.1950	Adder	1.41
938881	AE1-116	0.6374	Adder	0.75
938951	AE1-123	1.6446	Adder	1.93
938991	AE1-128 C	12.6893	50/50	12.6893
938992	AE1-128 E	8.4595	50/50	8.4595
939171	AE1-147 C	0.8699	Adder	1.02
939172	AE1-147 E	0.5799	Adder	0.68
939291	AE1-160 C	1.0211	Adder	1.2
939292	AE1-160 E	0.5869	Adder	0.69
940201	AE2-001 C	0.8685	Adder	1.02
940202	AE2-001 E	0.5790	Adder	0.68
940681	AE2-055 C (Suspended)	0.8483	Adder	1.0
940682	AE2-055 E (Suspended)	0.5656	Adder	0.67
940861	AE2-074 C	1.6883	Adder	1.99
940862	AE2-074 E	2.2224	Adder	2.61
941191	AE2-113 C	6.6071	Adder	7.77
941192	AE2-113 E	7.1137	Adder	8.37
941231	AE2-117 C	1.0882	Adder	1.28
941232	AE2-117 E	0.7255	Adder	0.85
941241	AE2-118 C	1.0882	Adder	1.28
941242	AE2-118 E	0.7255	Adder	0.85
941261	AE2-120 C	0.8677	Adder	1.02
941262	AE2-120 E	0.5785	Adder	0.68
941271	AE2-121 C	0.4637	Adder	0.55
941272	AE2-121 E	0.3096	Adder	0.36
941321	AE2-126 C	1.1540	Adder	1.36
941322	AE2-126 E	0.7694	Adder	0.91
941331	AE2-129 C	1.3112	Adder	1.54
941332	AE2-129 E	0.8741	Adder	1.03
941351	AE2-131 C	1.3112	Adder	1.54
941352	AE2-131 E	0.8741	Adder	1.03
941421	AE2-139 C	4.4628	Adder	5.25
941422	AE2-139 E	2.9752	Adder	3.5
942121	AE2-224 C	11.0940	50/50	11.0940
942122	AE2-224 E	7.3960	50/50	7.3960
942351	AE2-248 C	0.6854	Adder	0.81
942352	AE2-248 E	0.4570	Adder	0.54
942491	AE2-262 C	3.9028	Adder	4.59
942492	AE2-262 E	2.6227	Adder	3.09
942501	AE2-263 C	3.6686	Adder	4.32
942502	AE2-263 E	2.4494	Adder	2.88
942511	AE2-264 C	5.1755	Adder	6.09
942512	AE2-264 E	3.4503	Adder	4.06
942811	AE2-299 C	2.1929	Adder	2.58

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942812	AE2-299 E	8.7715	Adder	10.32
942961	AE2-316 C	3.5685	Adder	4.2
942962	AE2-316 E	5.0887	Adder	5.99
943151	AE2-344 C	4.6736	Adder	5.5
943152	AE2-344 E	3.1157	Adder	3.67
943351	AF1-006 C	0.8073	Adder	0.95
943352	AF1-006 E	0.4541	Adder	0.53
943711	AF1-039 C O1	0.8277	Adder	0.97
943712	AF1-039 E O1	0.5518	Adder	0.65
943751	AF1-043	8.3788	Adder	9.86
944001	AF1-068 C O1	0.9112	Adder	1.07
944002	AF1-068 E O1	0.5125	Adder	0.6
944181	AF1-086 C O1	2.7924	Adder	3.29
944182	AF1-086 E O1	12.1484	Adder	14.29
944261	AF1-094 C	0.8554	Adder	1.01
944262	AF1-094 E	0.5702	Adder	0.67
944281	AF1-096 C	0.9648	Adder	1.14
944282	AF1-096 E	0.6432	Adder	0.76
944301	AF1-098 C	3.3713	Adder	3.97
944302	AF1-098 E	2.2475	Adder	2.64
944311	AF1-099 C	5.9244	Adder	6.97
944312	AF1-099 E	3.9496	Adder	4.65
944321	AF1-100 C	12.6059	Adder	14.83
944322	AF1-100 E	8.4040	Adder	9.89
944381	AF1-103 O1	1.7343	Adder	2.04
944411	AF1-106 O1	1.7626	Adder	2.07
944471	AF1-112 C	0.9162	Adder	1.08
944472	AF1-112 E	0.5154	Adder	0.61
944671	AF1-132 C O1	0.8528	Adder	1.0
944672	AF1-132 E O1	0.5685	Adder	0.67
944691	AF1-134 C O1	1.4353	Adder	1.69
944692	AF1-134 E O1	0.9569	Adder	1.13
944751	AF1-140 C	1.4386	Adder	1.69
944752	AF1-140 E	0.9590	Adder	1.13
944771	AF1-142 C	9.4791	Adder	11.15
944772	AF1-142 E	6.3194	Adder	7.43
944781	AF1-143 C	7.1701	Adder	8.44
944782	AF1-143 E	3.8240	Adder	4.5
944841	AF1-149 C	0.8677	Adder	1.02
944842	AF1-149 E	0.5785	Adder	0.68
944881	AF1-153 C O1	1.0338	Adder	1.22
944882	AF1-153 E O1	0.6892	Adder	0.81
944901	AF1-155 C	1.0336	Adder	1.22
944902	AF1-155 E	0.6890	Adder	0.81
945021	AF1-167 C	0.6395	Adder	0.75
945022	AF1-167 E	0.4272	Adder	0.5
945051	AF1-170 C	2.9067	Adder	3.42
945052	AF1-170 E	1.9378	Adder	2.28
945121	AF1-177	0.4336	Adder	0.51
945161	AF1-181	0.0677	Adder	0.08
945171	AF1-182	0.3383	Adder	0.4
945181	AF1-183	0.0910	Adder	0.11

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945331	AF1-198	0.2365	Adder	0.28
945451	AF1-210 C	0.6992	Adder	0.82
945452	AF1-210 E	0.4662	Adder	0.55
945491	AF1-214 C	0.8678	Adder	1.02
945492	AF1-214 E	0.5785	Adder	0.68
945551	AF1-220 C	8.6431	Adder	10.17
945552	AF1-220 E	5.7652	Adder	6.78
945671	AF1-232 C O2	14.9758	Adder	17.62
945672	AF1-232 E O2	8.0639	Adder	9.49
945751	AF1-240 C O1	1.4084	Adder	1.66
945752	AF1-240 E O1	0.9389	Adder	1.1
946071	AF1-272 C O1	15.7799	50/50	15.7799
946072	AF1-272 E O1	10.5200	50/50	10.5200
946081	AF1-273 C O1	7.3643	Adder	8.66
946082	AF1-273 E O1	4.9095	Adder	5.78
946111	AF1-276 C	7.5744	Adder	8.91
946112	AF1-276 E	3.7307	Adder	4.39
946121	AF1-277 C	7.5744	Adder	8.91
946122	AF1-277 E	3.7307	Adder	4.39
946131	AF1-278 C	6.0369	Adder	7.1
946132	AF1-278 E	3.0026	Adder	3.53
946211	AF1-286 C O1	0.7138	Adder	0.84
946212	AF1-286 E O1	0.4847	Adder	0.57
946221	AF1-287 C	0.8067	Adder	0.95
946222	AF1-287 E	0.5378	Adder	0.63
946381	AF1-302 C	1.5583	Adder	1.83
946382	AF1-302 E	2.0777	Adder	2.44
946401	AF1-304 C	4.9399	Adder	5.81
946402	AF1-304 E	3.2932	Adder	3.87
946421	AF1-306 C	4.3129	Adder	5.07
946422	AF1-306 E	17.2515	Adder	20.3
946431	AF1-307 C	7.1345	50/50	7.1345
946432	AF1-307 E	4.7563	50/50	4.7563
946571	AF1-321 C O1	2.2427	50/50	2.2427
946572	AF1-321 E O1	1.4951	50/50	1.4951
946771	AF1-217 C O2	0.8067	Adder	0.95
946772	AF1-217 E O2	0.5378	Adder	0.63
957001	AF2-001 C O1	2.2427	50/50	2.2427
957002	AF2-001 E O1	1.4951	50/50	1.4951
957011	AF2-002 C O1	1.1213	50/50	1.1213
957012	AF2-002 E O1	0.7476	50/50	0.7476
957161	AF2-010 C	1.7484	Adder	3.88
957162	AF2-010 E	1.1783	Adder	2.62
957451	AF2-039 C	0.4203	Adder	0.93
957452	AF2-039 E	0.2802	Adder	0.62
957512	AF2-045 E	1.4273	Adder	3.17
957561	AF2-050 C	5.5470	50/50	5.5470
957562	AF2-050 E	3.6980	50/50	3.6980
957571	AF2-051 C O1	1.3230	Adder	2.94
957572	AF2-051 E O1	0.6815	Adder	1.51
957581	AF2-052 C	2.2007	Adder	4.89
957582	AF2-052 E	1.0706	Adder	2.38

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957681	AF2-062 C	7.3711	Adder	16.36
957682	AF2-062 E	4.9141	Adder	10.91
957931	AF2-087 C	0.2059	Adder	0.46
957932	AF2-087 E	0.2835	Adder	0.63
957941	AF2-088 C	0.2023	Adder	0.45
957942	AF2-088 E	0.1349	Adder	0.3
957951	AF2-089 C	0.1406	Adder	0.31
957952	AF2-089 E	0.0724	Adder	0.16
957981	AF2-092 C	0.5693	Adder	1.26
957982	AF2-092 E	0.3796	Adder	0.84
958031	AF2-097 C	0.1003	Adder	0.22
958032	AF2-097 E	0.0669	Adder	0.15
958101	AF2-104 C	0.1802	Adder	0.4
958102	AF2-104 E	0.1201	Adder	0.27
958271	AF2-121 C	0.6949	Adder	1.54
958272	AF2-121 E	0.4633	Adder	1.03
958361	AF2-130 C	0.5615	Adder	1.25
958362	AF2-130 E	0.3743	Adder	0.83
958411	AF2-135 C	0.1900	Adder	0.42
958412	AF2-135 E	0.1267	Adder	0.28
958471	AF2-141	0.5067	Adder	1.12
958731	AF2-164 C O1	2.4513	Adder	5.44
958732	AF2-164 E O1	1.6342	Adder	3.63
958741	AF2-165 C	0.5404	Adder	1.2
958742	AF2-165 E	0.3603	Adder	0.8
958751	AF2-166 C	0.5615	Adder	1.25
958752	AF2-166 E	0.3743	Adder	0.83
959061	AF2-197 C O1	1.6039	Adder	3.56
959062	AF2-197 E O1	2.4058	Adder	5.34
959301	AF2-221 C	1.1633	50/50	1.1633
959302	AF2-221 E	1.6065	50/50	1.6065
959401	AF2-231 C	0.1442	Adder	0.32
959402	AF2-231 E	0.0961	Adder	0.21
959441	AF2-235 C	0.2557	Adder	0.57
959442	AF2-235 E	0.1705	Adder	0.38
959461	AF2-237 C	0.2267	Adder	0.5
959462	AF2-237 E	0.1511	Adder	0.34
959471	AF2-238 C	0.5755	Adder	1.28
959472	AF2-238 E	0.3836	Adder	0.85
959481	AF2-239 C	0.4355	Adder	0.97
959482	AF2-239 E	0.3492	Adder	0.78
959491	AF2-240 C	0.5044	Adder	1.12
959492	AF2-240 E	0.4297	Adder	0.95
959501	AF2-241 C	0.5278	Adder	1.17
959502	AF2-241 E	0.4064	Adder	0.9
959521	AF2-243 C	0.4053	Adder	0.9
959522	AF2-243 E	0.2702	Adder	0.6
959741	AF2-265 C	0.4124	Adder	0.92
959742	AF2-265 E	0.3069	Adder	0.68
959792	AF2-270 E	0.6558	50/50	0.6558
959802	AF2-271 E	0.1963	Adder	0.44
959822	AF2-273 E	0.1487	Adder	0.33

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960022	AF2-293 E	0.0448	Adder	0.1
960031	AF2-294 C	0.5171	Adder	1.15
960032	AF2-294 E	0.3447	Adder	0.77
960041	AF2-295 C	0.5478	Adder	1.22
960042	AF2-295 E	0.3652	Adder	0.81
960051	AF2-296 C	0.7607	Adder	1.69
960052	AF2-296 E	0.5072	Adder	1.13
960211	AF2-312 C	0.8320	Adder	1.85
960212	AF2-312 E	0.5547	Adder	1.23
960271	AF2-318 C	0.4709	Adder	1.05
960272	AF2-318 E	0.3139	Adder	0.7
960321	AF2-323 C O1	1.0633	Adder	2.36
960322	AF2-323 E O1	0.7088	Adder	1.57
960391	AF2-330 C	3.7356	Adder	8.29
960392	AF2-330 E	1.6339	Adder	3.63
960451	AF2-336 C O1	0.9489	Adder	2.11
960452	AF2-336 E O1	0.6326	Adder	1.4
960461	AF2-337 C O1	0.9489	Adder	2.11
960462	AF2-337 E O1	0.6326	Adder	1.4
960471	AF2-338 C O1	0.9489	Adder	2.11
960472	AF2-338 E O1	0.6326	Adder	1.4
960481	AF2-339 C O1	0.9489	Adder	2.11
960482	AF2-339 E O1	0.6326	Adder	1.4
960901	AF2-381 C	14.9091	50/50	14.9091
960902	AF2-381 E	7.8459	50/50	7.8459
961141	AF2-405	0.4671	Adder	1.04
961151	AF2-406	3.5031	Adder	7.78
961201	AF2-411 O1	17.8114	Adder	39.54
961211	AF2-412 O1	7.1197	Adder	15.8
961451	AF2-436	0.0528	Adder	0.12
NEWTON	NEWTON	0.5437	Confirmed LTF	0.5437
FARMERCITY	FARMERCITY	0.0283	Confirmed LTF	0.0283
G-007A	G-007A	0.0216	Confirmed LTF	0.0216
VFT	VFT	0.3289	Confirmed LTF	0.3289
CALDERWOOD	CALDERWOOD	0.2863	Confirmed LTF	0.2863
PRAIRIE	PRAIRIE	1.3277	Confirmed LTF	1.3277
CHEOAH	CHEOAH	0.2888	Confirmed LTF	0.2888
EDWARDS	EDWARDS	0.1694	Confirmed LTF	0.1694
TILTON	TILTON	0.3106	Confirmed LTF	0.3106
MADISON	MADISON	0.0302	Confirmed LTF	0.0302
GIBSON	GIBSON	0.2779	Confirmed LTF	0.2779
BLUEG	BLUEG	0.9027	Confirmed LTF	0.9027
TRIMBLE	TRIMBLE	0.2894	Confirmed LTF	0.2894
CATAWBA	CATAWBA	0.2138	Confirmed LTF	0.2138

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344415	200819	26ERIE SE	PENELEC	200600	26ERIE SO	PENELEC	8	PN-P2-3-PN-115-23D	breaker	866.0	101.51	102.0	DC	9.48

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	11.5912	50/50	11.5912
200643	26SENECA#2	10.9472	50/50	10.9472
200644	26SENECA#3	1.0779	50/50	1.0779
200649	26PENNTech	1.1711	50/50	1.1711
200823	26MHP_X3-003	1.3166	Adder	1.55
200849	26LAKVU GN	0.5452	50/50	0.5452
200894	26K02	4.7191	Adder	5.55
200898	26AA1-106	1.6819	Adder	1.98
201201	26WRREN CT	3.6060	50/50	3.6060
201477	26Y2-055	10.6273	50/50	10.6273
203349	26Z1-069 C	0.3106	50/50	0.3106
203909	26Z1-038	1.2989	Adder	1.53
203910	26Z1-091	1.6272	Adder	1.91
203999	P-047 E	7.1265	Adder	8.38
235003	AC1-025 E	0.1088	Adder	0.13
236828	01GRAYMONT	0.2998	Adder	0.35
294573	P-028 E	7.8999	Adder	9.29
915952	Y3-092 NFWTR	131.5300	50/50	131.5300
916202	Z1-069 E	7.6755	50/50	7.6755
918682	AA1-082 E	4.5082	Adder	5.3
919201	AA1-144 OP	12.8380	Adder	15.1
919491	AA2-000	41.6966	Adder	49.05
920341	AA2-132 (Suspended)	1.7803	Adder	2.09
922932	AB1-082 OP (Suspended)	3.1553	50/50	3.1553
923442	AB1-160 C	0.0887	50/50	0.0887
923443	AB1-160 E	2.1930	50/50	2.1930
923821	AB2-019 FTWR	3.6828	50/50	3.6828
930511	AB1-092	1.5310	Adder	1.8
936421	AD2-055	3.1520	Adder	3.71
939171	AE1-147 C	0.9039	Adder	1.06
939172	AE1-147 E	0.6026	Adder	0.71
940201	AE2-001 C	0.9014	Adder	1.06
940202	AE2-001 E	0.6009	Adder	0.71
940681	AE2-055 C (Suspended)	0.8624	Adder	1.01
940682	AE2-055 E (Suspended)	0.5749	Adder	0.68
940861	AE2-074 C	2.3958	50/50	2.3958
940862	AE2-074 E	3.1538	50/50	3.1538
941191	AE2-113 C	10.5550	50/50	10.5550
941192	AE2-113 E	11.3643	50/50	11.3643
941261	AE2-120 C	0.8999	Adder	1.06
941262	AE2-120 E	0.6000	Adder	0.71

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941271	AE2-121 C	0.4830	Adder	0.57
941272	AE2-121 E	0.3225	Adder	0.38
941321	AE2-126 C	1.5685	50/50	1.5685
941322	AE2-126 E	1.0457	50/50	1.0457
941331	AE2-129 C	0.8607	Adder	1.01
941332	AE2-129 E	0.5738	Adder	0.68
941351	AE2-131 C	0.8607	Adder	1.01
941352	AE2-131 E	0.5738	Adder	0.68
941421	AE2-139 C	4.8559	Adder	5.71
941422	AE2-139 E	3.2373	Adder	3.81
942351	AE2-248 C	0.7029	Adder	0.83
942352	AE2-248 E	0.4686	Adder	0.55
942491	AE2-262 C	4.3057	Adder	5.07
942492	AE2-262 E	2.8934	Adder	3.4
942501	AE2-263 C	4.0473	Adder	4.76
942502	AE2-263 E	2.7022	Adder	3.18
942811	AE2-299 C	18.6630	50/50	18.6630
942812	AE2-299 E	74.6522	50/50	74.6522
942961	AE2-316 C	2.8685	Adder	3.37
942962	AE2-316 E	4.0905	Adder	4.81
943351	AF1-006 C	2.6250	50/50	2.6250
943352	AF1-006 E	1.4766	50/50	1.4766
943751	AF1-043	9.4560	Adder	11.12
944001	AF1-068 C O1	0.9320	Adder	1.1
944002	AF1-068 E O1	0.5242	Adder	0.62
944301	AF1-098 C	23.9050	50/50	23.9050
944302	AF1-098 E	15.9366	50/50	15.9366
944311	AF1-099 C	6.5360	Adder	7.69
944312	AF1-099 E	4.3573	Adder	5.13
944321	AF1-100 C	13.9982	Adder	16.47
944322	AF1-100 E	9.3321	Adder	10.98
944381	AF1-103 O1	7.3352	50/50	7.3352
944411	AF1-106 O1	1.8731	Adder	2.2
944471	AF1-112 C	0.9418	Adder	1.11
944472	AF1-112 E	0.5297	Adder	0.62
944671	AF1-132 C O1	0.8710	Adder	1.02
944672	AF1-132 E O1	0.5807	Adder	0.68
944771	AF1-142 C	10.4576	Adder	12.3
944772	AF1-142 E	6.9717	Adder	8.2
944841	AF1-149 C	0.8998	Adder	1.06
944842	AF1-149 E	0.5999	Adder	0.71
944881	AF1-153 C O1	1.4118	50/50	1.4118
944882	AF1-153 E O1	0.9412	50/50	0.9412
944901	AF1-155 C	1.4022	50/50	1.4022
944902	AF1-155 E	0.9348	50/50	0.9348
945121	AF1-177	1.8338	50/50	1.8338
945161	AF1-181	0.0744	Adder	0.09
945171	AF1-182	0.3718	Adder	0.44
945181	AF1-183	0.0895	Adder	0.11
945331	AF1-198	0.2269	Adder	0.27
945491	AF1-214 C	0.9000	Adder	1.06
945492	AF1-214 E	0.6000	Adder	0.71

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945551	AF1-220 C	13.7619	50/50	13.7619
945552	AF1-220 E	9.1797	50/50	9.1797
946111	AF1-276 C	14.2094	50/50	14.2094
946112	AF1-276 E	6.9986	50/50	6.9986
946121	AF1-277 C	14.2094	50/50	14.2094
946122	AF1-277 E	6.9986	50/50	6.9986
946131	AF1-278 C	11.3251	50/50	11.3251
946132	AF1-278 E	5.6328	50/50	5.6328
946211	AF1-286 C O1	0.7586	Adder	0.89
946212	AF1-286 E O1	0.5151	Adder	0.61
946381	AF1-302 C	1.2526	Adder	1.47
946382	AF1-302 E	1.6701	Adder	1.96
946421	AF1-306 C	6.9690	50/50	6.9690
946422	AF1-306 E	27.8762	50/50	27.8762
957451	AF2-039 C	0.3683	Adder	0.82
957452	AF2-039 E	0.2455	Adder	0.54
957581	AF2-052 C	6.4628	50/50	6.4628
957582	AF2-052 E	3.1441	50/50	3.1441
957681	AF2-062 C	24.0768	50/50	24.0768
957682	AF2-062 E	16.0512	50/50	16.0512
957941	AF2-088 C	0.1773	Adder	0.39
957942	AF2-088 E	0.1182	Adder	0.26
958031	AF2-097 C	0.6152	50/50	0.6152
958032	AF2-097 E	0.4102	50/50	0.4102
958271	AF2-121 C	0.4562	Adder	1.01
958272	AF2-121 E	0.3041	Adder	0.68
959061	AF2-197 C O1	1.7085	Adder	3.79
959062	AF2-197 E O1	2.5628	Adder	5.69
959471	AF2-238 C	0.5528	Adder	1.23
959472	AF2-238 E	0.3685	Adder	0.82
959481	AF2-239 C	0.4656	Adder	1.03
959482	AF2-239 E	0.3733	Adder	0.83
959491	AF2-240 C	0.5361	Adder	1.19
959492	AF2-240 E	0.4567	Adder	1.01
959501	AF2-241 C	0.5609	Adder	1.25
959502	AF2-241 E	0.4318	Adder	0.96
959741	AF2-265 C	0.3961	Adder	0.88
959742	AF2-265 E	0.2948	Adder	0.65
960022	AF2-293 E	0.0466	Adder	0.1
960031	AF2-294 C	0.5690	Adder	1.26
960032	AF2-294 E	0.3793	Adder	0.84
960041	AF2-295 C	1.4022	50/50	1.4022
960042	AF2-295 E	0.9348	50/50	0.9348
960271	AF2-318 C	0.5033	Adder	1.12
960272	AF2-318 E	0.3355	Adder	0.74
961141	AF2-405	0.4964	Adder	1.1
961151	AF2-406	3.7227	Adder	8.26
961201	AF2-411 O1	14.0515	Adder	31.19
961211	AF2-412 O1	6.3332	Adder	14.06
961451	AF2-436	0.0581	Adder	0.13
NEWTON	NEWTON	1.4946	Confirmed LTF	1.4946
FARMERCITY	FARMERCITY	0.0768	Confirmed LTF	0.0768

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
G-007A	G-007A	4.5505	Confirmed LTF	4.5505
VFT	VFT	12.5517	Confirmed LTF	12.5517
CALDERWOOD	CALDERWOOD	0.5402	Confirmed LTF	0.5402
PRAIRIE	PRAIRIE	3.4819	Confirmed LTF	3.4819
CHEOAH	CHEOAH	0.5405	Confirmed LTF	0.5405
EDWARDS	EDWARDS	0.5089	Confirmed LTF	0.5089
TILTON	TILTON	0.9053	Confirmed LTF	0.9053
MADISON	MADISON	0.0585	Confirmed LTF	0.0585
GIBSON	GIBSON	0.7617	Confirmed LTF	0.7617
BLUEG	BLUEG	2.3905	Confirmed LTF	2.3905
TRIMBLE	TRIMBLE	0.7680	Confirmed LTF	0.7680
CATAWBA	CATAWBA	0.3028	Confirmed LTF	0.3028

11.6.13 Index 13

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
98767556	200908	26CHAPMAN+	PENELEC	235220	01MOSHAN	AP	1	Base Case	single	520.0	119.88	121.1	DC	6.33

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200851	26MEHOOP3	1.2333	80/20	1.2333
200887	26ARMNA MT	0.4098	80/20	0.4098
200898	26AA1-106	5.2259	80/20	5.2259
200917	26MTNTP_P28	0.6271	80/20	0.6271
200949	26X1-109	23.2285	80/20	23.2285
203261	26BLOSSBCT	0.5349	80/20	0.5349
203283	26MANOR_T86	0.0348	80/20	0.0348
203347	26NME_Y1-047	0.4160	80/20	0.4160
203349	26Z1-069 C	0.1271	80/20	0.1271
203350	26MILZ1-092	0.4296	80/20	0.4296
203351	26GROZ1-110	0.9014	80/20	0.9014
203352	26CANZ2-011	0.9014	80/20	0.9014
203907	26Y2-042	1.7588	80/20	1.7588
203909	26Z1-038	2.4133	80/20	2.4133
203910	26Z1-091	2.2137	80/20	2.2137
917631	Z2-104	0.0265	80/20	0.0265
919201	AA1-144 OP	30.8771	80/20	30.8771
919491	AA2-000	299.7786	80/20	299.7786
920341	AA2-132 (Suspended)	2.1184	80/20	2.1184
920351	AA2-133	0.4810	80/20	0.4810
923442	AB1-160 C	0.0363	80/20	0.0363
930511	AB1-092	11.0070	80/20	11.0070
934801	AD1-108	0.0679	80/20	0.0679
934811	AD1-109	0.0498	80/20	0.0498
934821	AD1-110	0.0314	80/20	0.0314
935061	AD1-142	0.0237	80/20	0.0237
936421	AD2-055	22.6614	80/20	22.6614
939171	AE1-147 C	-1.2320	Adder	-1.45
940681	AE2-055 C (Suspended)	-1.1421	Adder	-1.34
941421	AE2-139 C	15.4332	80/20	15.4332
943751	AF1-043	67.9843	80/20	67.9843
944411	AF1-106 O1	2.5028	80/20	2.5028
944841	AF1-149 C	-1.2231	Adder	-1.44
945331	AF1-198	0.4080	80/20	0.4080
946211	AF1-286 C O1	1.0136	80/20	1.0136
959061	AF2-197 C O1	6.3282	80/20	6.3282
959471	AF2-238 C	1.8316	80/20	1.8316
959481	AF2-239 C	1.7202	80/20	1.7202
959491	AF2-240 C	1.3515	80/20	1.3515
959501	AF2-241 C	1.4141	80/20	1.4141
959741	AF2-265 C	1.3126	80/20	1.3126
960031	AF2-294 C	1.2774	80/20	1.2774

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960271	AF2-318 C	1.8596	80/20	1.8596
961141	AF2-405	1.2514	80/20	1.2514
961151	AF2-406	9.3855	80/20	9.3855
961201	AF2-411 O1	26.0910	80/20	26.0910
961211	AF2-412 O1	12.8895	80/20	12.8895
961451	AF2-436	0.2102	80/20	0.2102
961461	AF2-437	0.1442	80/20	0.1442
NEWTON	NEWTON	0.4642	Confirmed LTF	0.4642
FARMERCITY	FARMERCITY	0.0240	Confirmed LTF	0.0240
G-007A	G-007A	2.3951	Confirmed LTF	2.3951
VFT	VFT	6.9402	Confirmed LTF	6.9402
CALDERWOOD	CALDERWOOD	0.1938	Confirmed LTF	0.1938
PRAIRIE	PRAIRIE	1.1004	Confirmed LTF	1.1004
CHEOAH	CHEOAH	0.1947	Confirmed LTF	0.1947
EDWARDS	EDWARDS	0.1536	Confirmed LTF	0.1536
TILTON	TILTON	0.2759	Confirmed LTF	0.2759
MADISON	MADISON	0.0161	Confirmed LTF	0.0161
GIBSON	GIBSON	0.2370	Confirmed LTF	0.2370
BLUEG	BLUEG	0.7517	Confirmed LTF	0.7517
TRIMBLE	TRIMBLE	0.2410	Confirmed LTF	0.2410
CATAWBA	CATAWBA	0.1243	Confirmed LTF	0.1243

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344289	200912	26CONEMAGH	PENELEC	200005	CONEM-GH	PJM	3	PN-P2_3-PN-230-0252-A	breaker	1066.0	122.32	122.78	DC	11.33

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200503	26C.SLOPE (Deactivation : 07/06/2019)	31.2262	50/50	31.2262
200794	26CONEMAGH	0.6545	50/50	0.6545
200805	26COLVER13 (Deactivation : 01/09/2020)	23.2600	Adder	27.36
200809	26SITHE	2.0167	50/50	2.0167
200833	26SEWRDB34	37.4753	50/50	37.4753
200834	26SW_E13_K22	0.0875	50/50	0.0875
200837	26HOMER C1	34.7328	50/50	34.7328
200838	26HOMER C2	29.3172	50/50	29.3172
200839	26HOMER C3	31.0362	50/50	31.0362
200846	26FORWARD	0.3117	50/50	0.3117
200864	K-013 E	7.2275	50/50	7.2275
200883	Q-053 E	14.0093	50/50	14.0093
200886	26ARWF_N39	0.8478	50/50	0.8478
200888	26HIGHLAND	0.7206	50/50	0.7206
200889	26STNY CRK	0.5285	50/50	0.5285
200894	26K02	5.7263	Adder	6.74
200898	26AA1-106	2.1159	Adder	2.49
200915	26CHSTN_FL	0.3826	50/50	0.3826
200925	26R32	0.8314	50/50	0.8314
200945	26CT_V3-030	0.2531	50/50	0.2531
201477	26Y2-055	3.4623	Adder	4.07
202225	26SCI_S29B	0.1361	50/50	0.1361
203034	26NA_O38_P22	0.7418	50/50	0.7418
203910	26Z1-091	1.8412	Adder	2.17
203999	P-047 E	9.8717	Adder	11.61
235003	AC1-025 E	0.1587	Adder	0.19
236828	01GRAYMONT	0.4288	Adder	0.5
290086	Q-036 E	7.8836	Adder	9.27
292350	K-023	6.6881	Adder	7.87
292542	L-013 1	6.5052	Adder	7.65
293301	N-039 E	19.6595	50/50	19.6595
293393	V3-030E	7.7347	50/50	7.7347
293432	R-040 E	0.3659	Adder	0.43
293603	O-018 E	16.7097	50/50	16.7097
293902	O-048 E	5.8546	Adder	6.89
294515	O38_P22	17.2021	50/50	17.2021
294903	P-060 E	12.2552	50/50	12.2552

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
296332	R-032 E	19.2804	50/50	19.2804
913142	Y1-033 E OP1	5.3852	Adder	6.34
916202	Z1-069 E	8.0004	Adder	9.41
917672	Z2-108 E	3.6591	Adder	4.3
919201	AA1-144 OP	15.1504	Adder	17.82
919491	AA2-000	51.6967	Adder	60.82
920341	AA2-132 (Suspended)	2.0572	Adder	2.42
922932	AB1-082 OP (Suspended)	2.9413	Adder	3.46
923443	AB1-160 E	2.2858	Adder	2.69
930511	AB1-092	1.8982	Adder	2.23
935191	AD1-154	3.2936	Adder	3.87
936421	AD2-055	3.9080	Adder	4.6
936991	AD2-133 C	3.5476	Adder	4.17
936992	AD2-133 E	16.2264	Adder	19.09
938351	AE1-053	2.0329	Adder	2.39
938881	AE1-116	1.2677	50/50	1.2677
938951	AE1-123	2.3069	Adder	2.71
938991	AE1-128 C	21.9226	50/50	21.9226
938992	AE1-128 E	14.6150	50/50	14.6150
939171	AE1-147 C	1.2893	Adder	1.52
939172	AE1-147 E	0.8595	Adder	1.01
939291	AE1-160 C	1.4262	Adder	1.68
939292	AE1-160 E	0.8198	Adder	0.96
940201	AE2-001 C	1.2877	Adder	1.51
940202	AE2-001 E	0.8585	Adder	1.01
940681	AE2-055 C (Suspended)	1.2646	Adder	1.49
940682	AE2-055 E (Suspended)	0.8431	Adder	0.99
940861	AE2-074 C	2.2334	Adder	2.63
940862	AE2-074 E	2.9399	Adder	3.46
941191	AE2-113 C	9.0111	Adder	10.6
941192	AE2-113 E	9.7021	Adder	11.41
941231	AE2-117 C	1.9331	Adder	2.27
941232	AE2-117 E	1.2887	Adder	1.52
941241	AE2-118 C	1.9331	Adder	2.27
941242	AE2-118 E	1.2887	Adder	1.52
941261	AE2-120 C	1.2869	Adder	1.51
941262	AE2-120 E	0.8580	Adder	1.01
941271	AE2-121 C	0.6868	Adder	0.81
941272	AE2-121 E	0.4586	Adder	0.54
941321	AE2-126 C	1.6708	Adder	1.97
941322	AE2-126 E	1.1138	Adder	1.31
941331	AE2-129 C	2.0887	Adder	2.46
941332	AE2-129 E	1.3924	Adder	1.64
941351	AE2-131 C	2.0887	Adder	2.46
941352	AE2-131 E	1.3924	Adder	1.64
941421	AE2-139 C	5.7887	Adder	6.81
941422	AE2-139 E	3.8592	Adder	4.54
942121	AE2-224 C	21.1128	50/50	21.1128
942122	AE2-224 E	14.0752	50/50	14.0752
942351	AE2-248 C	1.0194	Adder	1.2
942352	AE2-248 E	0.6796	Adder	0.8
942491	AE2-262 C	5.6912	Adder	6.7

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942492	AE2-262 E	3.8245	Adder	4.5
942501	AE2-263 C	5.3497	Adder	6.29
942502	AE2-263 E	3.5718	Adder	4.2
942511	AE2-264 C	9.4052	Adder	11.06
942512	AE2-264 E	6.2701	Adder	7.38
942811	AE2-299 C	3.0513	Adder	3.59
942812	AE2-299 E	12.2052	Adder	14.36
942961	AE2-316 C	5.0155	Adder	5.9
942962	AE2-316 E	7.1522	Adder	8.41
943151	AE2-344 C	6.5475	Adder	7.7
943152	AE2-344 E	4.3650	Adder	5.14
943711	AF1-039 C O1	1.4247	Adder	1.68
943712	AF1-039 E O1	0.9498	Adder	1.12
943751	AF1-043	11.7239	Adder	13.79
944001	AF1-068 C O1	1.3561	Adder	1.6
944002	AF1-068 E O1	0.7628	Adder	0.9
944181	AF1-086 C O1	4.0187	Adder	4.73
944182	AF1-086 E O1	17.4836	Adder	20.57
944261	AF1-094 C	1.1977	Adder	1.41
944262	AF1-094 E	0.7985	Adder	0.94
944281	AF1-096 C	1.3476	Adder	1.59
944282	AF1-096 E	0.8984	Adder	1.06
944301	AF1-098 C	4.7042	Adder	5.53
944302	AF1-098 E	3.1362	Adder	3.69
944311	AF1-099 C	8.6392	Adder	10.16
944312	AF1-099 E	5.7595	Adder	6.78
944321	AF1-100 C	18.3065	Adder	21.54
944322	AF1-100 E	12.2043	Adder	14.36
944381	AF1-103 O1	2.3868	Adder	2.81
944411	AF1-106 O1	2.2629	Adder	2.66
944471	AF1-112 C	1.3618	Adder	1.6
944472	AF1-112 E	0.7660	Adder	0.9
944671	AF1-132 C O1	1.2697	Adder	1.49
944672	AF1-132 E O1	0.8465	Adder	1.0
944691	AF1-134 C O1	2.0909	Adder	2.46
944692	AF1-134 E O1	1.3939	Adder	1.64
944751	AF1-140 C	3.0046	50/50	3.0046
944752	AF1-140 E	2.0031	50/50	2.0031
944771	AF1-142 C	13.8227	Adder	16.26
944772	AF1-142 E	9.2152	Adder	10.84
944781	AF1-143 C	12.1972	Adder	14.35
944782	AF1-143 E	6.5052	Adder	7.65
944841	AF1-149 C	1.2868	Adder	1.51
944842	AF1-149 E	0.8579	Adder	1.01
944881	AF1-153 C O1	1.4700	Adder	1.73
944882	AF1-153 E O1	0.9800	Adder	1.15
944901	AF1-155 C	1.4695	Adder	1.73
944902	AF1-155 E	0.9797	Adder	1.15
945021	AF1-167 C	0.9039	Adder	1.06
945022	AF1-167 E	0.6037	Adder	0.71
945121	AF1-177	0.5967	Adder	0.7
945161	AF1-181	0.0985	Adder	0.12

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945171	AF1-182	0.4925	Adder	0.58
945181	AF1-183	0.1340	Adder	0.16
945331	AF1-198	0.3071	Adder	0.36
945451	AF1-210 C	0.9958	Adder	1.17
945452	AF1-210 E	0.6639	Adder	0.78
945491	AF1-214 C	1.2869	Adder	1.51
945492	AF1-214 E	0.8580	Adder	1.01
945551	AF1-220 C	12.2600	Adder	14.42
945552	AF1-220 E	8.1778	Adder	9.62
945671	AF1-232 C O2	29.9790	50/50	29.9790
945672	AF1-232 E O2	16.1426	50/50	16.1426
945751	AF1-240 C O1	1.9761	Adder	2.32
945752	AF1-240 E O1	1.3174	Adder	1.55
946071	AF1-272 C O1	12.9445	Adder	15.23
946072	AF1-272 E O1	8.6297	Adder	10.15
946081	AF1-273 C O1	14.7579	50/50	14.7579
946082	AF1-273 E O1	9.8386	50/50	9.8386
946111	AF1-276 C	10.1126	Adder	11.9
946112	AF1-276 E	4.9808	Adder	5.86
946121	AF1-277 C	10.1126	Adder	11.9
946122	AF1-277 E	4.9808	Adder	5.86
946131	AF1-278 C	8.0599	Adder	9.48
946132	AF1-278 E	4.0088	Adder	4.72
946211	AF1-286 C O1	0.9165	Adder	1.08
946212	AF1-286 E O1	0.6223	Adder	0.73
946221	AF1-287 C	1.1296	Adder	1.33
946222	AF1-287 E	0.7531	Adder	0.89
946381	AF1-302 C	2.1902	Adder	2.58
946382	AF1-302 E	2.9203	Adder	3.44
946401	AF1-304 C	6.8962	Adder	8.11
946402	AF1-304 E	4.5975	Adder	5.41
946421	AF1-306 C	6.1273	Adder	7.21
946422	AF1-306 E	24.5094	Adder	28.83
946431	AF1-307 C	13.6494	50/50	13.6494
946432	AF1-307 E	9.0996	50/50	9.0996
946571	AF1-321 C O1	3.7594	50/50	3.7594
946572	AF1-321 E O1	2.5062	50/50	2.5062
946771	AF1-217 C O2	1.1296	Adder	1.33
946772	AF1-217 E O2	0.7531	Adder	0.89
957001	AF2-001 C O1	3.7594	50/50	3.7594
957002	AF2-001 E O1	2.5062	50/50	2.5062
957011	AF2-002 C O1	1.8797	50/50	1.8797
957012	AF2-002 E O1	1.2531	50/50	1.2531
957161	AF2-010 C	2.4478	Adder	5.43
957162	AF2-010 E	1.6496	Adder	3.66
957451	AF2-039 C	0.6259	Adder	1.39
957452	AF2-039 E	0.4173	Adder	0.93
957512	AF2-045 E	5.8171	50/50	5.8171
957561	AF2-050 C	10.5564	50/50	10.5564
957562	AF2-050 E	7.0376	50/50	7.0376
957571	AF2-051 C O1	1.8332	Adder	4.07
957572	AF2-051 E O1	0.9444	Adder	2.1

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957581	AF2-052 C	2.9522	Adder	6.55
957582	AF2-052 E	1.4362	Adder	3.19
957681	AF2-062 C	9.8097	Adder	21.78
957682	AF2-062 E	6.5398	Adder	14.52
957931	AF2-087 C	0.8194	50/50	0.8194
957932	AF2-087 E	1.1283	50/50	1.1283
957941	AF2-088 C	0.3014	Adder	0.67
957942	AF2-088 E	0.2009	Adder	0.45
957951	AF2-089 C	0.1964	Adder	0.44
957952	AF2-089 E	0.1012	Adder	0.22
957981	AF2-092 C	2.1966	50/50	2.1966
957982	AF2-092 E	1.4644	50/50	1.4644
958101	AF2-104 C	0.6761	50/50	0.6761
958102	AF2-104 E	0.4507	50/50	0.4507
958271	AF2-121 C	1.1070	Adder	2.46
958272	AF2-121 E	0.7380	Adder	1.64
958361	AF2-130 C	0.7857	Adder	1.74
958362	AF2-130 E	0.5238	Adder	1.16
958411	AF2-135 C	0.3232	Adder	0.72
958412	AF2-135 E	0.2155	Adder	0.48
958471	AF2-141	0.8619	Adder	1.91
958731	AF2-164 C O1	3.3089	Adder	7.34
958732	AF2-164 E O1	2.2059	Adder	4.9
958741	AF2-165 C	0.7534	Adder	1.67
958742	AF2-165 E	0.5023	Adder	1.11
958751	AF2-166 C	0.7857	Adder	1.74
958752	AF2-166 E	0.5238	Adder	1.16
959061	AF2-197 C O1	2.0415	Adder	4.53
959062	AF2-197 E O1	3.0622	Adder	6.8
959301	AF2-221 C	2.0266	50/50	2.0266
959302	AF2-221 E	2.7987	50/50	2.7987
959401	AF2-231 C	0.2561	Adder	0.57
959402	AF2-231 E	0.1708	Adder	0.38
959441	AF2-235 C	0.3571	Adder	0.79
959442	AF2-235 E	0.2381	Adder	0.53
959461	AF2-237 C	0.3174	Adder	0.7
959462	AF2-237 E	0.2116	Adder	0.47
959471	AF2-238 C	0.7426	Adder	1.65
959472	AF2-238 E	0.4950	Adder	1.1
959481	AF2-239 C	0.5535	Adder	1.23
959482	AF2-239 E	0.4438	Adder	0.99
959491	AF2-240 C	0.6476	Adder	1.44
959492	AF2-240 E	0.5517	Adder	1.22
959501	AF2-241 C	0.6776	Adder	1.5
959502	AF2-241 E	0.5217	Adder	1.16
959521	AF2-243 C	0.5651	Adder	1.25
959522	AF2-243 E	0.3767	Adder	0.84
959741	AF2-265 C	0.5322	Adder	1.18
959742	AF2-265 E	0.3960	Adder	0.88
959792	AF2-270 E	1.1330	50/50	1.1330
959802	AF2-271 E	0.3327	Adder	0.74
959822	AF2-273 E	0.2111	Adder	0.47

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960022	AF2-293 E	0.0664	Adder	0.15
960031	AF2-294 C	0.6575	Adder	1.46
960032	AF2-294 E	0.4383	Adder	0.97
960041	AF2-295 C	0.7788	Adder	1.73
960042	AF2-295 E	0.5192	Adder	1.15
960051	AF2-296 C	1.1082	Adder	2.46
960052	AF2-296 E	0.7388	Adder	1.64
960211	AF2-312 C	2.9816	50/50	2.9816
960212	AF2-312 E	1.9877	50/50	1.9877
960271	AF2-318 C	0.5983	Adder	1.33
960272	AF2-318 E	0.3989	Adder	0.89
960321	AF2-323 C O1	1.4727	Adder	3.27
960322	AF2-323 E O1	0.9818	Adder	2.18
960391	AF2-330 C	14.8326	50/50	14.8326
960392	AF2-330 E	6.4873	50/50	6.4873
960451	AF2-336 C O1	3.6611	50/50	3.6611
960452	AF2-336 E O1	2.4407	50/50	2.4407
960461	AF2-337 C O1	3.6611	50/50	3.6611
960462	AF2-337 E O1	2.4407	50/50	2.4407
960471	AF2-338 C O1	3.6611	50/50	3.6611
960472	AF2-338 E O1	2.4407	50/50	2.4407
960481	AF2-339 C O1	3.6611	50/50	3.6611
960482	AF2-339 E O1	2.4407	50/50	2.4407
960901	AF2-381 C	25.3292	50/50	25.3292
960902	AF2-381 E	13.3295	50/50	13.3295
961141	AF2-405	0.5997	Adder	1.33
961151	AF2-406	4.4975	Adder	9.98
961201	AF2-411 O1	22.9633	Adder	50.97
961211	AF2-412 O1	9.1953	Adder	20.41
WEC	WEC	0.0652	Confirmed LTF	0.0652
LGEE	LGEE	0.0764	Confirmed LTF	0.0764
CALDERWOOD	CALDERWOOD	0.0452	Confirmed LTF	0.0452
CBM-W2	CBM-W2	0.5569	Confirmed LTF	0.5569
CBM-W1	CBM-W1	3.8281	Confirmed LTF	3.8281
O-066	O-066	8.3866	Confirmed LTF	8.3866
CHEOAH	CHEOAH	0.0485	Confirmed LTF	0.0485
CBM-S1	CBM-S1	0.0596	Confirmed LTF	0.0596
G-007	G-007	1.3936	Confirmed LTF	1.3936
MEC	MEC	0.2447	Confirmed LTF	0.2447
CATAWBA	CATAWBA	0.0952	Confirmed LTF	0.0952

11.6.15 Index 15

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344636	200924	26CANYON	PENELEC	200706	26N.MESHNP	PENELEC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	666.0	125.34	127.31	DC	14.28

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	2.7835	80/20	2.7835
200643	26SENECA#2	2.6288	80/20	2.6288
200644	26SENECA#3	0.2588	80/20	0.2588
200887	26ARMNA MT	0.9749	80/20	0.9749
200898	26AA1-106	7.9120	80/20	7.9120
200949	26X1-109	60.8654	80/20	60.8654
201201	26WRREN CT	0.6284	80/20	0.6284
201477	26Y2-055	1.8543	80/20	1.8543
203261	26BLOSSBCT	1.0064	80/20	1.0064
203283	26MANOR_T86	0.0744	80/20	0.0744
203349	26Z1-069 C	0.4421	80/20	0.4421
203350	26MILZ1-092	1.0277	80/20	1.0277
203351	26GROZ1-110	1.3648	80/20	1.3648
203352	26CANZ2-011	1.3648	80/20	1.3648
919201	AA1-144 OP	74.9653	80/20	74.9653
919491	AA2-000	197.7334	80/20	197.7334
920341	AA2-132 (Suspended)	1.8688	80/20	1.8688
920351	AA2-133	0.5660	80/20	0.5660
922932	AB1-082 OP (Suspended)	2.8190	80/20	2.8190
923442	AB1-160 C	0.1263	80/20	0.1263
930511	AB1-092	7.2602	80/20	7.2602
934801	AD1-108	0.1029	80/20	0.1029
934811	AD1-109	0.0754	80/20	0.0754
935061	AD1-142	0.0568	80/20	0.0568
936421	AD2-055	14.9474	80/20	14.9474
940861	AE2-074 C	2.1405	80/20	2.1405
941191	AE2-113 C	5.1770	80/20	5.1770
941421	AE2-139 C	27.3328	80/20	27.3328
943751	AF1-043	44.8423	80/20	44.8423
944381	AF1-103 O1	1.2782	80/20	1.2782
944411	AF1-106 O1	5.9878	80/20	5.9878
945121	AF1-177	0.3196	80/20	0.3196
945331	AF1-198	0.7677	80/20	0.7677
946111	AF1-276 C	5.9315	80/20	5.9315
946121	AF1-277 C	5.9315	80/20	5.9315
946131	AF1-278 C	4.7275	80/20	4.7275
946211	AF1-286 C O1	2.4251	80/20	2.4251
957581	AF2-052 C	3.5405	80/20	3.5405
957681	AF2-062 C	10.9812	80/20	10.9812
959061	AF2-197 C O1	14.2789	80/20	14.2789

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959471	AF2-238 C	3.7598	80/20	3.7598
959481	AF2-239 C	3.6826	80/20	3.6826
959491	AF2-240 C	3.2334	80/20	3.2334
959501	AF2-241 C	3.3831	80/20	3.3831
959741	AF2-265 C	2.6946	80/20	2.6946
960031	AF2-294 C	1.1269	80/20	1.1269
960271	AF2-318 C	3.9812	80/20	3.9812
961141	AF2-405	2.9939	80/20	2.9939
961151	AF2-406	22.4542	80/20	22.4542
961201	AF2-411 O1	69.2130	80/20	69.2130
961211	AF2-412 O1	32.6820	80/20	32.6820
961451	AF2-436	0.2473	80/20	0.2473
WEC	WEC	0.2800	Confirmed LTF	0.2800
LGEE	LGEE	0.4872	Confirmed LTF	0.4872
CPL	CPL	0.3076	Confirmed LTF	0.3076
CBM-W2	CBM-W2	6.5602	Confirmed LTF	6.5602
CBM-W1	CBM-W1	11.6468	Confirmed LTF	11.6468
TVA	TVA	1.0416	Confirmed LTF	1.0416
CBM-S2	CBM-S2	3.1732	Confirmed LTF	3.1732
CBM-S1	CBM-S1	6.5093	Confirmed LTF	6.5093
MEC	MEC	1.3602	Confirmed LTF	1.3602

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344342	208009	LACK	PPL	200074	LACKAW	PJM	3	PL_P42_001057	breaker	1167.0	117.29	118.26	DC	24.63

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	5.2686	Adder	6.2
200894	26K02	8.7984	Adder	10.35
200898	26AA1-106	3.4019	Adder	4.0
203907	26Y2-042	5.6777	Adder	6.68
203909	26Z1-038	5.2687	Adder	6.2
203910	26Z1-091	4.3538	Adder	5.12
203999	P-047 E	13.0678	Adder	15.37
208052	LAEN G2	27.4578	50/50	27.4578
208053	LAEN G3	27.4578	50/50	27.4578
208055	LAEN G1	27.4578	50/50	27.4578
209003	KSTN IPP (Deactivation : 31/05/2020)	1.9890	Adder	2.34
209009	PEIP 2	3.5998	50/50	3.5998
209010	PEIP 1	2.1994	50/50	2.1994
209029	WAYM IPP	0.7331	50/50	0.7331
294573	P-028 E	31.6118	Adder	37.19
914271	Y2-089	30.4785	50/50	30.4785
916202	Z1-069 E	6.4890	Adder	7.63
917662	Z2-107 E (Suspended)	4.0592	Adder	4.78
918601	AA1-077 C	2.8007	50/50	2.8007
918602	AA1-077 E	37.7264	50/50	37.7264
918682	AA1-082 E	12.1435	Adder	14.29
919201	AA1-144 OP	33.8976	Adder	39.88
919491	AA2-000	47.2181	Adder	55.55
920341	AA2-132 (Suspended)	3.9251	Adder	4.62
922932	AB1-082 OP (Suspended)	1.7593	Adder	2.07
923443	AB1-160 E	1.8540	Adder	2.18
923673	AB1-182 E	3.5931	Adder	4.23
930511	AB1-092	1.7337	Adder	2.04
936421	AD2-055	3.5694	Adder	4.2
938331	AE1-051	4.0592	Adder	4.78
938401	AE1-059 C O1	55.0800	Adder	64.8
940861	AE2-074 C	1.3359	Adder	1.57
940862	AE2-074 E	1.7584	Adder	2.07
941421	AE2-139 C	11.5729	Adder	13.62
941422	AE2-139 E	7.7152	Adder	9.08
943751	AF1-043	10.7082	Adder	12.6
944411	AF1-106 O1	3.5170	Adder	4.14
945331	AF1-198	0.3829	Adder	0.45
946211	AF1-286 C O1	1.4244	Adder	1.68
946212	AF1-286 E O1	0.9672	Adder	1.14
957121	AF2-006 C	5.7306	50/50	5.7306

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957122	AF2-006 E	1.7211	Adder	3.82
957131	AF2-007 C	5.7306	50/50	5.7306
957132	AF2-007 E	1.7211	Adder	3.82
959061	AF2-197 C O1	4.4390	Adder	9.85
959062	AF2-197 E O1	6.6584	Adder	14.78
959471	AF2-238 C	1.0698	Adder	2.37
959472	AF2-238 E	0.7132	Adder	1.58
959481	AF2-239 C	1.2407	Adder	2.75
959482	AF2-239 E	0.9948	Adder	2.21
959491	AF2-240 C	1.0066	Adder	2.23
959492	AF2-240 E	0.8574	Adder	1.9
959501	AF2-241 C	1.0532	Adder	2.34
959502	AF2-241 E	0.8108	Adder	1.8
959741	AF2-265 C	0.7667	Adder	1.7
959742	AF2-265 E	0.5706	Adder	1.27
959912	AF2-282 E	0.6454	Adder	1.43
959922	AF2-283 E	0.4303	Adder	0.96
960031	AF2-294 C	1.2545	Adder	2.78
960032	AF2-294 E	0.8363	Adder	1.86
960271	AF2-318 C	1.3413	Adder	2.98
960272	AF2-318 E	0.8942	Adder	1.98
961141	AF2-405	0.9320	Adder	2.07
961151	AF2-406	6.9900	Adder	15.52
961201	AF2-411 O1	21.2429	Adder	47.15
961211	AF2-412 O1	9.9812	Adder	22.16
961451	AF2-436	0.1865	Adder	0.41
961461	AF2-437	0.2467	Adder	0.55
WEC	WEC	0.0891	Confirmed LTF	0.0891
LGEE	LGEE	0.1438	Confirmed LTF	0.1438
CBM-W2	CBM-W2	1.6544	Confirmed LTF	1.6544
CBM-W1	CBM-W1	4.0282	Confirmed LTF	4.0282
TVA	TVA	0.2058	Confirmed LTF	0.2058
O-066	O-066	32.5584	Confirmed LTF	32.5584
CBM-S1	CBM-S1	1.4228	Confirmed LTF	1.4228
G-007	G-007	4.6634	Confirmed LTF	4.6634
MEC	MEC	0.4004	Confirmed LTF	0.4004
CATAWBA	CATAWBA	0.0073	Confirmed LTF	0.0073

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344400	208009	LACK	PPL	200074	LACKAW	PJM	4	PL_P42_001055	breaker	1145.0	104.33	105.22	DC	22.21

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	4.7537	Adder	5.59
200894	26K02	7.9202	Adder	9.32
200898	26AA1-106	3.0638	Adder	3.6
203907	26Y2-042	5.1254	Adder	6.03
203909	26Z1-038	4.7538	Adder	5.59
203910	26Z1-091	3.9256	Adder	4.62
203999	P-047 E	11.7664	Adder	13.84
208052	LAEN G2	24.8026	50/50	24.8026
208053	LAEN G3	24.8026	50/50	24.8026
208055	LAEN G1	24.8026	50/50	24.8026
209003	KSTN IPP (Deactivation : 31/05/2020)	1.7967	Adder	2.11
209009	PEIP 2	3.2517	50/50	3.2517
209010	PEIP 1	1.9867	50/50	1.9867
209029	WAYM IPP	0.6622	50/50	0.6622
294573	P-028 E	28.5223	Adder	33.56
914271	Y2-089	27.5312	50/50	27.5312
916202	Z1-069 E	5.8297	Adder	6.86
917662	Z2-107 E (Suspended)	3.6666	Adder	4.31
918601	AA1-077 C	2.5299	50/50	2.5299
918602	AA1-077 E	34.0782	50/50	34.0782
918682	AA1-082 E	10.9475	Adder	12.88
919201	AA1-144 OP	30.5572	Adder	35.95
919491	AA2-000	42.3696	Adder	49.85
920341	AA2-132 (Suspended)	3.5376	Adder	4.16
922932	AB1-082 OP (Suspended)	1.5770	Adder	1.86
923443	AB1-160 E	1.6656	Adder	1.96
923673	AB1-182 E	3.1299	Adder	3.68
925951	AC1-071 C (Suspended)	2.7815	Adder	3.27
925952	AC1-071 E (Suspended)	18.6207	Adder	21.91
930511	AB1-092	1.5557	Adder	1.83
936421	AD2-055	3.2029	Adder	3.77
938331	AE1-051	3.6666	Adder	4.31
938401	AE1-059 C O1	45.1639	Adder	53.13
940861	AE2-074 C	1.1974	Adder	1.41
940862	AE2-074 E	1.5762	Adder	1.85
941421	AE2-139 C	10.4283	Adder	12.27
941422	AE2-139 E	6.9522	Adder	8.18
943751	AF1-043	9.6087	Adder	11.3
944411	AF1-106 O1	3.1680	Adder	3.73
945331	AF1-198	0.3446	Adder	0.41
946211	AF1-286 C O1	1.2830	Adder	1.51

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946212	AF1-286 E O1	0.8712	Adder	1.02
957121	AF2-006 C	5.1764	50/50	5.1764
957122	AF2-006 E	1.5547	Adder	3.45
957131	AF2-007 C	5.1764	50/50	5.1764
957132	AF2-007 E	1.5547	Adder	3.45
959061	AF2-197 C O1	4.0016	Adder	8.88
959062	AF2-197 E O1	6.0023	Adder	13.32
959471	AF2-238 C	0.9634	Adder	2.14
959472	AF2-238 E	0.6423	Adder	1.43
959481	AF2-239 C	1.1185	Adder	2.48
959482	AF2-239 E	0.8968	Adder	1.99
959491	AF2-240 C	0.9067	Adder	2.01
959492	AF2-240 E	0.7723	Adder	1.71
959501	AF2-241 C	0.9486	Adder	2.11
959502	AF2-241 E	0.7304	Adder	1.62
959741	AF2-265 C	0.6904	Adder	1.53
959742	AF2-265 E	0.5138	Adder	1.14
959912	AF2-282 E	0.5830	Adder	1.29
959922	AF2-283 E	0.3887	Adder	0.86
959942	AF2-285 E	0.2425	Adder	0.54
960031	AF2-294 C	1.1306	Adder	2.51
960032	AF2-294 E	0.7537	Adder	1.67
960271	AF2-318 C	1.2092	Adder	2.68
960272	AF2-318 E	0.8061	Adder	1.79
961141	AF2-405	0.8395	Adder	1.86
961151	AF2-406	6.2963	Adder	13.98
961201	AF2-411 O1	19.1048	Adder	42.41
961211	AF2-412 O1	8.9809	Adder	19.94
961261	AF2-417 C O1	1.2734	Adder	2.83
961262	AF2-417 E O1	0.8489	Adder	1.88
961451	AF2-436	0.1682	Adder	0.37
961461	AF2-437	0.2227	Adder	0.49
WEC	WEC	0.0589	Confirmed LTF	0.0589
LGEE	LGEE	0.0907	Confirmed LTF	0.0907
CBM-W2	CBM-W2	0.9419	Confirmed LTF	0.9419
CBM-W1	CBM-W1	2.7772	Confirmed LTF	2.7772
TVA	TVA	0.0938	Confirmed LTF	0.0938
O-066	O-066	26.6582	Confirmed LTF	26.6582
CBM-S1	CBM-S1	0.7157	Confirmed LTF	0.7157
G-007	G-007	3.9489	Confirmed LTF	3.9489
MEC	MEC	0.2542	Confirmed LTF	0.2542
CATAWBA	CATAWBA	0.0283	Confirmed LTF	0.0283

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344801	919490	AA2-000 TAP	PENELEC	200908	26CHAPMAN+	PENELEC	1	Base Case	single	546.0	114.17	115.33	DC	6.33

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200851	26MEHOOP3	1.2333	80/20	1.2333
200887	26ARMNA MT	0.4098	80/20	0.4098
200898	26AA1-106	5.2259	80/20	5.2259
200917	26MTNTP_P28	0.6271	80/20	0.6271
200949	26X1-109	23.2285	80/20	23.2285
203261	26BLOSSBCT	0.5349	80/20	0.5349
203283	26MANOR_T86	0.0348	80/20	0.0348
203347	26NME_Y1-047	0.4160	80/20	0.4160
203349	26Z1-069 C	0.1271	80/20	0.1271
203350	26MILZ1-092	0.4296	80/20	0.4296
203351	26GROZ1-110	0.9014	80/20	0.9014
203352	26CANZ2-011	0.9014	80/20	0.9014
203907	26Y2-042	1.7588	80/20	1.7588
203909	26Z1-038	2.4133	80/20	2.4133
203910	26Z1-091	2.2137	80/20	2.2137
917631	Z2-104	0.0265	80/20	0.0265
919201	AA1-144 OP	30.8771	80/20	30.8771
919491	AA2-000	299.7786	80/20	299.7786
920341	AA2-132 (Suspended)	2.1184	80/20	2.1184
920351	AA2-133	0.4810	80/20	0.4810
923442	AB1-160 C	0.0363	80/20	0.0363
930511	AB1-092	11.0070	80/20	11.0070
934801	AD1-108	0.0679	80/20	0.0679
934811	AD1-109	0.0498	80/20	0.0498
934821	AD1-110	0.0314	80/20	0.0314
935061	AD1-142	0.0237	80/20	0.0237
936421	AD2-055	22.6614	80/20	22.6614
939171	AE1-147 C	-1.2320	Adder	-1.45
940681	AE2-055 C (Suspended)	-1.1421	Adder	-1.34
941421	AE2-139 C	15.4332	80/20	15.4332
943751	AF1-043	67.9843	80/20	67.9843
944411	AF1-106 O1	2.5028	80/20	2.5028
944841	AF1-149 C	-1.2231	Adder	-1.44
945331	AF1-198	0.4080	80/20	0.4080
946211	AF1-286 C O1	1.0136	80/20	1.0136
959061	AF2-197 C O1	6.3282	80/20	6.3282
959471	AF2-238 C	1.8316	80/20	1.8316
959481	AF2-239 C	1.7202	80/20	1.7202
959491	AF2-240 C	1.3515	80/20	1.3515
959501	AF2-241 C	1.4141	80/20	1.4141
959741	AF2-265 C	1.3126	80/20	1.3126

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960031	AF2-294 C	1.2774	80/20	1.2774
960271	AF2-318 C	1.8596	80/20	1.8596
961141	AF2-405	1.2514	80/20	1.2514
961151	AF2-406	9.3855	80/20	9.3855
961201	AF2-411 O1	26.0910	80/20	26.0910
961211	AF2-412 O1	12.8895	80/20	12.8895
961451	AF2-436	0.2102	80/20	0.2102
961461	AF2-437	0.1442	80/20	0.1442
NEWTON	NEWTON	0.4642	Confirmed LTF	0.4642
FARMERCITY	FARMERCITY	0.0240	Confirmed LTF	0.0240
G-007A	G-007A	2.3951	Confirmed LTF	2.3951
VFT	VFT	6.9402	Confirmed LTF	6.9402
CALDERWOOD	CALDERWOOD	0.1938	Confirmed LTF	0.1938
PRAIRIE	PRAIRIE	1.1004	Confirmed LTF	1.1004
CHEOAH	CHEOAH	0.1947	Confirmed LTF	0.1947
EDWARDS	EDWARDS	0.1536	Confirmed LTF	0.1536
TILTON	TILTON	0.2759	Confirmed LTF	0.2759
MADISON	MADISON	0.0161	Confirmed LTF	0.0161
GIBSON	GIBSON	0.2370	Confirmed LTF	0.2370
BLUEG	BLUEG	0.7517	Confirmed LTF	0.7517
TRIMBLE	TRIMBLE	0.2410	Confirmed LTF	0.2410
CATAWBA	CATAWBA	0.1243	Confirmed LTF	0.1243

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344213	999391	26HOMER CT	PENELEC	200767	26HOMER CT	PENELEC	S	PN-P2-3-PN-230-9I	breaker	824.0	142.61	143.58	DC	17.83

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	2.2581	Adder	2.66
200831	26HNSMLK 4	2.3062	50/50	2.3062
200832	26HNSMLK 5	2.3062	50/50	2.3062
200838	26HOMER C2	55.4360	50/50	55.4360
200839	26HOMER C3	58.6863	50/50	58.6863
200894	26K02	6.8734	Adder	8.09
200898	26AA1-106	3.0195	Adder	3.55
201477	26Y2-055	4.7528	Adder	5.59
203349	26Z1-069 C	0.6127	50/50	0.6127
203907	26Y2-042	1.4740	Adder	1.73
203909	26Z1-038	2.2258	Adder	2.62
203910	26Z1-091	3.0268	Adder	3.56
203999	P-047 E	16.2571	Adder	19.13
294573	P-028 E	13.5487	Adder	15.94
915951	Y3-092 FTIR	139.7900	Merchant Transmission	139.7900
916202	Z1-069 E	15.1417	50/50	15.1417
917672	Z2-108 E	-1.9050	Adder	-2.24
917673	Z2-108 BAT	2.2412	Merchant Transmission	2.2412
918682	AA1-082 E	8.1675	Adder	9.61
919201	AA1-144 OP	22.9771	Adder	27.03
919491	AA2-000	46.5097	Adder	54.72
920341	AA2-132 (Suspended)	3.4030	Adder	4.0
922932	AB1-082 OP (Suspended)	5.4021	50/50	5.4021
923442	AB1-160 C	0.1750	50/50	0.1750
923443	AB1-160 E	4.3262	50/50	4.3262
930511	AB1-092	1.7077	Adder	2.01
936421	AD2-055	3.5159	Adder	4.14
938352	AE1-053 BAT	1.2451	Merchant Transmission	1.2451
938882	AE1-116 BAT	1.2997	Merchant Transmission	1.2997
938951	AE1-123	1.9425	Adder	2.29
939291	AE1-160 C	1.6510	Adder	1.94
939292	AE1-160 E	0.9490	Adder	1.12
940861	AE2-074 C	4.1018	50/50	4.1018
940862	AE2-074 E	5.3993	50/50	5.3993
941191	AE2-113 C	11.6833	Adder	13.75
941192	AE2-113 E	12.5792	Adder	14.8
941321	AE2-126 C	1.1273	Adder	1.33
941322	AE2-126 E	0.7515	Adder	0.88
941421	AE2-139 C	8.1793	Adder	9.62
941422	AE2-139 E	5.4528	Adder	6.42
942811	AE2-299 C	4.5446	Adder	5.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942812	AE2-299 E	18.1783	Adder	21.39
942961	AE2-316 C	5.5688	Adder	6.55
942962	AE2-316 E	7.9411	Adder	9.34
943151	AE2-344 C	9.5937	Adder	11.29
943152	AE2-344 E	6.3958	Adder	7.52
943351	AF1-006 C	1.6703	Adder	1.97
943352	AF1-006 E	0.9395	Adder	1.11
943751	AF1-043	10.5476	Adder	12.41
944261	AF1-094 C	1.5943	Adder	1.88
944262	AF1-094 E	1.0628	Adder	1.25
944281	AF1-096 C	1.5600	Adder	1.84
944282	AF1-096 E	1.0400	Adder	1.22
944301	AF1-098 C	6.7671	Adder	7.96
944302	AF1-098 E	4.5114	Adder	5.31
944321	AF1-100 C	11.7325	Adder	13.8
944322	AF1-100 E	7.8217	Adder	9.2
944381	AF1-103 O1	3.2766	Adder	3.85
944391	AF1-104 O1	2.4806	Adder	2.92
944411	AF1-106 O1	3.6963	Adder	4.35
944881	AF1-153 C O1	1.3320	Adder	1.57
944882	AF1-153 E O1	0.8880	Adder	1.04
944901	AF1-155 C	1.3359	Adder	1.57
944902	AF1-155 E	0.8906	Adder	1.05
945021	AF1-167 C	1.0020	Adder	1.18
945022	AF1-167 E	0.6692	Adder	0.79
945051	AF1-170 C	6.0691	Adder	7.14
945052	AF1-170 E	4.0460	Adder	4.76
945121	AF1-177	0.8191	Adder	0.96
945161	AF1-181	0.0611	Adder	0.07
945171	AF1-182	0.3051	Adder	0.36
945331	AF1-198	0.4849	Adder	0.57
945451	AF1-210 C	1.1249	Adder	1.32
945452	AF1-210 E	0.7499	Adder	0.88
945551	AF1-220 C	11.0386	Adder	12.99
945552	AF1-220 E	7.3631	Adder	8.66
945673	AF1-232 BAT	2.8870	Merchant Transmission	2.8870
946111	AF1-276 C	18.3526	50/50	18.3526
946112	AF1-276 E	9.0394	50/50	9.0394
946121	AF1-277 C	18.3526	50/50	18.3526
946122	AF1-277 E	9.0394	50/50	9.0394
946131	AF1-278 C	14.6273	50/50	14.6273
946132	AF1-278 E	7.2753	50/50	7.2753
946211	AF1-286 C O1	1.4970	Adder	1.76
946212	AF1-286 E O1	1.0165	Adder	1.2
946221	AF1-287 C	1.6546	Adder	1.95
946222	AF1-287 E	1.1031	Adder	1.3
946381	AF1-302 C	2.4318	Adder	2.86
946382	AF1-302 E	3.2424	Adder	3.81
946401	AF1-304 C	7.7632	Adder	9.13
946402	AF1-304 E	5.1755	Adder	6.09
946421	AF1-306 C	5.5327	Adder	6.51
946422	AF1-306 E	22.1309	Adder	26.04

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946771	AF1-217 C O2	1.6546	Adder	1.95
946772	AF1-217 E O2	1.1031	Adder	1.3
957161	AF2-010 C	3.2357	Adder	7.18
957162	AF2-010 E	2.1806	Adder	4.84
957513	AF2-045 BAT	1.3018	Merchant Transmission	1.3018
957571	AF2-051 C O1	2.6844	Adder	5.96
957572	AF2-051 E O1	1.3829	Adder	3.07
957581	AF2-052 C	9.5900	50/50	9.5900
957582	AF2-052 E	4.6654	50/50	4.6654
957681	AF2-062 C	34.1280	50/50	34.1280
957682	AF2-062 E	22.7520	50/50	22.7520
957951	AF2-089 C	0.2274	Adder	0.5
957952	AF2-089 E	0.1171	Adder	0.26
958031	AF2-097 C	0.2075	Adder	0.46
958032	AF2-097 E	0.1383	Adder	0.31
958361	AF2-130 C	0.7498	Adder	1.66
958362	AF2-130 E	0.4999	Adder	1.11
958472	AF2-141 BAT	1.3198	Merchant Transmission	1.3198
958731	AF2-164 C O1	5.4038	Adder	12.0
958732	AF2-164 E O1	3.6026	Adder	8.0
958741	AF2-165 C	0.8318	Adder	1.85
958742	AF2-165 E	0.5545	Adder	1.23
958751	AF2-166 C	0.7498	Adder	1.66
958752	AF2-166 E	0.4999	Adder	1.11
958791	AF2-170 C	0.7888	Adder	1.75
958792	AF2-170 E	0.5259	Adder	1.17
959061	AF2-197 C O1	3.2132	Adder	7.13
959062	AF2-197 E O1	4.8199	Adder	10.7
959441	AF2-235 C	0.4134	Adder	0.92
959442	AF2-235 E	0.2756	Adder	0.61
959461	AF2-237 C	0.4225	Adder	0.94
959462	AF2-237 E	0.2817	Adder	0.63
959471	AF2-238 C	1.1875	Adder	2.64
959472	AF2-238 E	0.7917	Adder	1.76
959481	AF2-239 C	0.8719	Adder	1.94
959482	AF2-239 E	0.6991	Adder	1.55
959491	AF2-240 C	1.0579	Adder	2.35
959492	AF2-240 E	0.9012	Adder	2.0
959501	AF2-241 C	1.1069	Adder	2.46
959502	AF2-241 E	0.8522	Adder	1.89
959521	AF2-243 C	0.6238	Adder	1.38
959522	AF2-243 E	0.4159	Adder	0.92
959741	AF2-265 C	0.8511	Adder	1.89
959742	AF2-265 E	0.6334	Adder	1.41
959793	AF2-270 BAT	0.1146	Merchant Transmission	0.1146
959822	AF2-273 E	0.2368	Adder	0.53
960031	AF2-294 C	1.0876	Adder	2.41
960032	AF2-294 E	0.7251	Adder	1.61
960041	AF2-295 C	0.7080	Adder	1.57
960042	AF2-295 E	0.4720	Adder	1.05
960271	AF2-318 C	0.9426	Adder	2.09
960272	AF2-318 E	0.6284	Adder	1.39

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960321	AF2-323 C O1	2.1565	Adder	4.79
960322	AF2-323 E O1	1.4376	Adder	3.19
960891	AF2-380 C	0.3777	Adder	0.84
960892	AF2-380 E	0.2518	Adder	0.56
961141	AF2-405	0.9795	Adder	2.17
961151	AF2-406	7.3464	Adder	16.31
961201	AF2-411 O1	87.8850	50/50	87.8850
961211	AF2-412 O1	34.1484	50/50	34.1484
961451	AF2-436	0.1051	Adder	0.23
961461	AF2-437	0.0640	Adder	0.14
WEC	WEC	0.0825	Confirmed LTF	0.0825
LGEE	LGEE	0.0884	Confirmed LTF	0.0884
CALDERWOOD	CALDERWOOD	0.0611	Confirmed LTF	0.0611
CBM-W2	CBM-W2	0.6552	Confirmed LTF	0.6552
CBM-W1	CBM-W1	5.1291	Confirmed LTF	5.1291
O-066	O-066	4.6435	Confirmed LTF	4.6435
CHEOAH	CHEOAH	0.0656	Confirmed LTF	0.0656
G-007	G-007	0.8476	Confirmed LTF	0.8476
MEC	MEC	0.3067	Confirmed LTF	0.3067
CATAWBA	CATAWBA	0.1176	Confirmed LTF	0.1176

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344143	999392	26HOMER CT	PENELEC	200767	26HOMER CT	PENELEC	N	PN-P2-3-PN-230-9E	breaker	807.0	162.13	163.12	DC	17.85

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	2.2564	Adder	2.65
200831	26HNSMLK 4	2.3113	50/50	2.3113
200832	26HNSMLK 5	2.3113	50/50	2.3113
200838	26HOMER C2	55.6552	50/50	55.6552
200839	26HOMER C3	58.9184	50/50	58.9184
200894	26K02	6.8715	Adder	8.08
200898	26AA1-106	3.0222	Adder	3.56
201477	26Y2-055	4.7584	Adder	5.6
203349	26Z1-069 C	0.6141	50/50	0.6141
203907	26Y2-042	1.4692	Adder	1.73
203909	26Z1-038	2.2240	Adder	2.62
203910	26Z1-091	3.0293	Adder	3.56
203999	P-047 E	16.2899	Adder	19.16
294573	P-028 E	13.5385	Adder	15.93
915951	Y3-092 FTIR	139.7200	Merchant Transmission	139.7200
916202	Z1-069 E	15.1780	50/50	15.1780
917672	Z2-108 E	-1.9286	Adder	-2.27
917673	Z2-108 BAT	2.2689	Merchant Transmission	2.2689
918682	AA1-082 E	8.1714	Adder	9.61
919201	AA1-144 OP	22.9896	Adder	27.05
919491	AA2-000	46.4350	Adder	54.63
920341	AA2-132 (Suspended)	3.4075	Adder	4.01
922932	AB1-082 OP (Suspended)	5.4154	50/50	5.4154
923442	AB1-160 C	0.1755	50/50	0.1755
923443	AB1-160 E	4.3366	50/50	4.3366
930511	AB1-092	1.7050	Adder	2.01
936421	AD2-055	3.5102	Adder	4.13
938352	AE1-053 BAT	1.2605	Merchant Transmission	1.2605
938882	AE1-116 BAT	1.3145	Merchant Transmission	1.3145
938951	AE1-123	1.9403	Adder	2.28
939291	AE1-160 C	1.6511	Adder	1.94
939292	AE1-160 E	0.9491	Adder	1.12
940861	AE2-074 C	4.1119	50/50	4.1119
940862	AE2-074 E	5.4127	50/50	5.4127
941191	AE2-113 C	11.7035	Adder	13.77
941192	AE2-113 E	12.6009	Adder	14.82
941321	AE2-126 C	1.1250	Adder	1.32
941322	AE2-126 E	0.7500	Adder	0.88
941421	AE2-139 C	8.1818	Adder	9.63
941422	AE2-139 E	5.4546	Adder	6.42
942811	AE2-299 C	4.5470	Adder	5.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942812	AE2-299 E	18.1881	Adder	21.4
942961	AE2-316 C	5.5705	Adder	6.55
942962	AE2-316 E	7.9436	Adder	9.35
943151	AE2-344 C	9.5973	Adder	11.29
943152	AE2-344 E	6.3982	Adder	7.53
943351	AF1-006 C	1.6704	Adder	1.97
943352	AF1-006 E	0.9396	Adder	1.11
943751	AF1-043	10.5306	Adder	12.39
944261	AF1-094 C	1.5946	Adder	1.88
944262	AF1-094 E	1.0630	Adder	1.25
944281	AF1-096 C	1.5601	Adder	1.84
944282	AF1-096 E	1.0401	Adder	1.22
944301	AF1-098 C	6.7704	Adder	7.97
944302	AF1-098 E	4.5136	Adder	5.31
944321	AF1-100 C	11.6905	Adder	13.75
944322	AF1-100 E	7.7936	Adder	9.17
944381	AF1-103 O1	3.2805	Adder	3.86
944391	AF1-104 O1	2.4801	Adder	2.92
944411	AF1-106 O1	3.7024	Adder	4.36
944881	AF1-153 C O1	1.3309	Adder	1.57
944882	AF1-153 E O1	0.8873	Adder	1.04
944901	AF1-155 C	1.3348	Adder	1.57
944902	AF1-155 E	0.8898	Adder	1.05
945021	AF1-167 C	1.0018	Adder	1.18
945022	AF1-167 E	0.6691	Adder	0.79
945051	AF1-170 C	6.0699	Adder	7.14
945052	AF1-170 E	4.0466	Adder	4.76
945121	AF1-177	0.8201	Adder	0.96
945161	AF1-181	0.0609	Adder	0.07
945171	AF1-182	0.3039	Adder	0.36
945331	AF1-198	0.4858	Adder	0.57
945451	AF1-210 C	1.1243	Adder	1.32
945452	AF1-210 E	0.7495	Adder	0.88
945551	AF1-220 C	11.0348	Adder	12.98
945552	AF1-220 E	7.3605	Adder	8.66
945673	AF1-232 BAT	2.9200	Merchant Transmission	2.9200
946111	AF1-276 C	18.3982	50/50	18.3982
946112	AF1-276 E	9.0618	50/50	9.0618
946121	AF1-277 C	18.3982	50/50	18.3982
946122	AF1-277 E	9.0618	50/50	9.0618
946131	AF1-278 C	14.6636	50/50	14.6636
946132	AF1-278 E	7.2934	50/50	7.2934
946211	AF1-286 C O1	1.4995	Adder	1.76
946212	AF1-286 E O1	1.0182	Adder	1.2
946221	AF1-287 C	1.6553	Adder	1.95
946222	AF1-287 E	1.1035	Adder	1.3
946381	AF1-302 C	2.4325	Adder	2.86
946382	AF1-302 E	3.2434	Adder	3.82
946401	AF1-304 C	7.7637	Adder	9.13
946402	AF1-304 E	5.1758	Adder	6.09
946421	AF1-306 C	5.5281	Adder	6.5
946422	AF1-306 E	22.1124	Adder	26.01

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946771	AF1-217 C O2	1.6553	Adder	1.95
946772	AF1-217 E O2	1.1035	Adder	1.3
957161	AF2-010 C	3.2363	Adder	7.18
957162	AF2-010 E	2.1810	Adder	4.84
957513	AF2-045 BAT	1.3172	Merchant Transmission	1.3172
957571	AF2-051 C O1	2.6870	Adder	5.96
957572	AF2-051 E O1	1.3842	Adder	3.07
957581	AF2-052 C	9.6122	50/50	9.6122
957582	AF2-052 E	4.6762	50/50	4.6762
957681	AF2-062 C	34.2168	50/50	34.2168
957682	AF2-062 E	22.8112	50/50	22.8112
957951	AF2-089 C	0.2274	Adder	0.5
957952	AF2-089 E	0.1171	Adder	0.26
958031	AF2-097 C	0.2075	Adder	0.46
958032	AF2-097 E	0.1383	Adder	0.31
958361	AF2-130 C	0.7494	Adder	1.66
958362	AF2-130 E	0.4996	Adder	1.11
958472	AF2-141 BAT	1.3361	Merchant Transmission	1.3361
958731	AF2-164 C O1	5.4157	Adder	12.02
958732	AF2-164 E O1	3.6105	Adder	8.01
958741	AF2-165 C	0.8318	Adder	1.85
958742	AF2-165 E	0.5545	Adder	1.23
958751	AF2-166 C	0.7494	Adder	1.66
958752	AF2-166 E	0.4996	Adder	1.11
958791	AF2-170 C	0.7887	Adder	1.75
958792	AF2-170 E	0.5258	Adder	1.17
959061	AF2-197 C O1	3.2158	Adder	7.14
959062	AF2-197 E O1	4.8237	Adder	10.71
959441	AF2-235 C	0.4134	Adder	0.92
959442	AF2-235 E	0.2756	Adder	0.61
959461	AF2-237 C	0.4226	Adder	0.94
959462	AF2-237 E	0.2817	Adder	0.63
959471	AF2-238 C	1.1896	Adder	2.64
959472	AF2-238 E	0.7931	Adder	1.76
959481	AF2-239 C	0.8726	Adder	1.94
959482	AF2-239 E	0.6996	Adder	1.55
959491	AF2-240 C	1.0596	Adder	2.35
959492	AF2-240 E	0.9027	Adder	2.0
959501	AF2-241 C	1.1087	Adder	2.46
959502	AF2-241 E	0.8536	Adder	1.89
959521	AF2-243 C	0.6239	Adder	1.38
959522	AF2-243 E	0.4159	Adder	0.92
959741	AF2-265 C	0.8525	Adder	1.89
959742	AF2-265 E	0.6344	Adder	1.41
959793	AF2-270 BAT	0.1159	Merchant Transmission	0.1159
959822	AF2-273 E	0.2367	Adder	0.53
960031	AF2-294 C	1.0890	Adder	2.42
960032	AF2-294 E	0.7260	Adder	1.61
960041	AF2-295 C	0.7074	Adder	1.57
960042	AF2-295 E	0.4716	Adder	1.05
960271	AF2-318 C	0.9433	Adder	2.09
960272	AF2-318 E	0.6289	Adder	1.4

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960321	AF2-323 C O1	2.1585	Adder	4.79
960322	AF2-323 E O1	1.4390	Adder	3.19
960891	AF2-380 C	0.3764	Adder	0.84
960892	AF2-380 E	0.2509	Adder	0.56
961141	AF2-405	0.9811	Adder	2.18
961151	AF2-406	7.3586	Adder	16.33
961201	AF2-411 O1	88.1220	50/50	88.1220
961211	AF2-412 O1	34.2290	50/50	34.2290
961451	AF2-436	0.1051	Adder	0.23
961461	AF2-437	0.0638	Adder	0.14
WEC	WEC	0.0564	Confirmed LTF	0.0564
LGEE	LGEE	0.0405	Confirmed LTF	0.0405
CALDERWOOD	CALDERWOOD	0.1039	Confirmed LTF	0.1039
CBM-W1	CBM-W1	4.1033	Confirmed LTF	4.1033
O-066	O-066	5.2416	Confirmed LTF	5.2416
CHEOAH	CHEOAH	0.1081	Confirmed LTF	0.1081
G-007	G-007	0.9412	Confirmed LTF	0.9412
MEC	MEC	0.1732	Confirmed LTF	0.1732
CATAWBA	CATAWBA	0.1481	Confirmed LTF	0.1481

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344243	999401	KEYSTONE	PJM	200011	KEYSTONE	PJM	4	PJM500_PN_P4-500-001D	breaker	634.0	141.39	142.04	DC	8.9

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200636	26IUP CO-G	0.5021	50/50	0.5021
200794	26CONEMAGH	0.3401	50/50	0.3401
200805	26COLVER13 (Deactivation : 01/09/2020)	19.4986	50/50	19.4986
200809	26SITHE	1.5787	50/50	1.5787
200833	26SEWRDB34	16.4203	50/50	16.4203
200837	26HOMER C1	27.1889	50/50	27.1889
200838	26HOMER C2	22.7783	50/50	22.7783
200839	26HOMER C3	24.1138	50/50	24.1138
200846	26FORWARD	0.1849	50/50	0.1849
200864	K-013 E	4.2867	50/50	4.2867
200883	Q-053 E	6.7034	Adder	7.89
200888	26HIGHLAND	0.4021	50/50	0.4021
200894	26K02	4.2797	Adder	5.03
200898	26AA1-106	1.6191	Adder	1.9
200906	26KEYSTN#3	0.8346	50/50	0.8346
200925	26R32	0.4640	50/50	0.4640
201477	26Y2-055	2.5158	Adder	2.96
202158	26CON.GEN1	0.0871	50/50	0.0871
202160	26CON.GEN2	0.0608	50/50	0.0608
203910	26Z1-091	1.4616	Adder	1.72
203999	P-047 E	7.6650	Adder	9.02
235003	AC1-025 E	0.1066	Adder	0.13
236828	01GRAYMONT	0.2892	Adder	0.34
290086	Q-036 E	4.7423	Adder	5.58
292350	K-023	3.9316	Adder	4.63
292542	L-013 1	3.8240	Adder	4.5
293301	N-039 E	8.9004	Adder	10.47
293393	V3-030E	4.0991	Adder	4.82
293432	R-040 E	0.2151	Adder	0.25
293603	O-018 E	9.3246	50/50	9.3246
293902	O-048 E	3.4416	Adder	4.05
294515	O38_P22	7.7878	Adder	9.16
294903	P-060 E	6.1011	Adder	7.18
296332	R-032 E	10.7592	50/50	10.7592
913142	Y1-033 E OP1	3.1285	Adder	3.68
916202	Z1-069 E	6.1111	Adder	7.19
917672	Z2-108 E	2.1510	Adder	2.53
918682	AA1-082 E	4.1676	Adder	4.9
919201	AA1-144 OP	11.8571	Adder	13.95
919491	AA2-000	36.9465	Adder	43.47

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
920341	AA2-132 (Suspended)	1.6179	Adder	1.9
922932	AB1-082 OP (Suspended)	2.2235	Adder	2.62
923443	AB1-160 E	1.7460	Adder	2.05
930511	AB1-092	1.3566	Adder	1.6
935191	AD1-154	2.3474	Adder	2.76
936421	AD2-055	2.7929	Adder	3.29
936991	AD2-133 C	2.1340	Adder	2.51
936992	AD2-133 E	9.7609	Adder	11.48
938351	AE1-053	1.1950	Adder	1.41
938881	AE1-116	0.6374	Adder	0.75
938951	AE1-123	1.6446	Adder	1.93
938991	AE1-128 C	12.6893	50/50	12.6893
938992	AE1-128 E	8.4595	50/50	8.4595
939171	AE1-147 C	0.8699	Adder	1.02
939172	AE1-147 E	0.5799	Adder	0.68
939291	AE1-160 C	1.0211	Adder	1.2
939292	AE1-160 E	0.5869	Adder	0.69
940201	AE2-001 C	0.8685	Adder	1.02
940202	AE2-001 E	0.5790	Adder	0.68
940681	AE2-055 C (Suspended)	0.8483	Adder	1.0
940682	AE2-055 E (Suspended)	0.5656	Adder	0.67
940861	AE2-074 C	1.6883	Adder	1.99
940862	AE2-074 E	2.2224	Adder	2.61
941191	AE2-113 C	6.6071	Adder	7.77
941192	AE2-113 E	7.1137	Adder	8.37
941231	AE2-117 C	1.0882	Adder	1.28
941232	AE2-117 E	0.7255	Adder	0.85
941241	AE2-118 C	1.0882	Adder	1.28
941242	AE2-118 E	0.7255	Adder	0.85
941261	AE2-120 C	0.8677	Adder	1.02
941262	AE2-120 E	0.5785	Adder	0.68
941271	AE2-121 C	0.4637	Adder	0.55
941272	AE2-121 E	0.3096	Adder	0.36
941321	AE2-126 C	1.1540	Adder	1.36
941322	AE2-126 E	0.7694	Adder	0.91
941331	AE2-129 C	1.3112	Adder	1.54
941332	AE2-129 E	0.8741	Adder	1.03
941351	AE2-131 C	1.3112	Adder	1.54
941352	AE2-131 E	0.8741	Adder	1.03
941421	AE2-139 C	4.4628	Adder	5.25
941422	AE2-139 E	2.9752	Adder	3.5
942121	AE2-224 C	11.0940	50/50	11.0940
942122	AE2-224 E	7.3960	50/50	7.3960
942351	AE2-248 C	0.6854	Adder	0.81
942352	AE2-248 E	0.4570	Adder	0.54
942491	AE2-262 C	3.9028	Adder	4.59
942492	AE2-262 E	2.6227	Adder	3.09
942501	AE2-263 C	3.6686	Adder	4.32
942502	AE2-263 E	2.4494	Adder	2.88
942511	AE2-264 C	5.1755	Adder	6.09
942512	AE2-264 E	3.4503	Adder	4.06
942811	AE2-299 C	2.1929	Adder	2.58

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942812	AE2-299 E	8.7715	Adder	10.32
942961	AE2-316 C	3.5685	Adder	4.2
942962	AE2-316 E	5.0887	Adder	5.99
943151	AE2-344 C	4.6736	Adder	5.5
943152	AE2-344 E	3.1157	Adder	3.67
943351	AF1-006 C	0.8073	Adder	0.95
943352	AF1-006 E	0.4541	Adder	0.53
943711	AF1-039 C O1	0.8277	Adder	0.97
943712	AF1-039 E O1	0.5518	Adder	0.65
943751	AF1-043	8.3788	Adder	9.86
944001	AF1-068 C O1	0.9112	Adder	1.07
944002	AF1-068 E O1	0.5125	Adder	0.6
944181	AF1-086 C O1	2.7924	Adder	3.29
944182	AF1-086 E O1	12.1484	Adder	14.29
944261	AF1-094 C	0.8554	Adder	1.01
944262	AF1-094 E	0.5702	Adder	0.67
944281	AF1-096 C	0.9648	Adder	1.14
944282	AF1-096 E	0.6432	Adder	0.76
944301	AF1-098 C	3.3713	Adder	3.97
944302	AF1-098 E	2.2475	Adder	2.64
944311	AF1-099 C	5.9244	Adder	6.97
944312	AF1-099 E	3.9496	Adder	4.65
944321	AF1-100 C	12.6059	Adder	14.83
944322	AF1-100 E	8.4040	Adder	9.89
944381	AF1-103 O1	1.7343	Adder	2.04
944411	AF1-106 O1	1.7626	Adder	2.07
944471	AF1-112 C	0.9162	Adder	1.08
944472	AF1-112 E	0.5154	Adder	0.61
944671	AF1-132 C O1	0.8528	Adder	1.0
944672	AF1-132 E O1	0.5685	Adder	0.67
944691	AF1-134 C O1	1.4353	Adder	1.69
944692	AF1-134 E O1	0.9569	Adder	1.13
944751	AF1-140 C	1.4386	Adder	1.69
944752	AF1-140 E	0.9590	Adder	1.13
944771	AF1-142 C	9.4791	Adder	11.15
944772	AF1-142 E	6.3194	Adder	7.43
944781	AF1-143 C	7.1701	Adder	8.44
944782	AF1-143 E	3.8240	Adder	4.5
944841	AF1-149 C	0.8677	Adder	1.02
944842	AF1-149 E	0.5785	Adder	0.68
944881	AF1-153 C O1	1.0338	Adder	1.22
944882	AF1-153 E O1	0.6892	Adder	0.81
944901	AF1-155 C	1.0336	Adder	1.22
944902	AF1-155 E	0.6890	Adder	0.81
945021	AF1-167 C	0.6395	Adder	0.75
945022	AF1-167 E	0.4272	Adder	0.5
945051	AF1-170 C	2.9067	Adder	3.42
945052	AF1-170 E	1.9378	Adder	2.28
945121	AF1-177	0.4336	Adder	0.51
945161	AF1-181	0.0677	Adder	0.08
945171	AF1-182	0.3383	Adder	0.4
945181	AF1-183	0.0910	Adder	0.11

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945331	AF1-198	0.2365	Adder	0.28
945451	AF1-210 C	0.6992	Adder	0.82
945452	AF1-210 E	0.4662	Adder	0.55
945491	AF1-214 C	0.8678	Adder	1.02
945492	AF1-214 E	0.5785	Adder	0.68
945551	AF1-220 C	8.6431	Adder	10.17
945552	AF1-220 E	5.7652	Adder	6.78
945671	AF1-232 C O2	14.9758	Adder	17.62
945672	AF1-232 E O2	8.0639	Adder	9.49
945751	AF1-240 C O1	1.4084	Adder	1.66
945752	AF1-240 E O1	0.9389	Adder	1.1
946071	AF1-272 C O1	15.7799	50/50	15.7799
946072	AF1-272 E O1	10.5200	50/50	10.5200
946081	AF1-273 C O1	7.3643	Adder	8.66
946082	AF1-273 E O1	4.9095	Adder	5.78
946111	AF1-276 C	7.5744	Adder	8.91
946112	AF1-276 E	3.7307	Adder	4.39
946121	AF1-277 C	7.5744	Adder	8.91
946122	AF1-277 E	3.7307	Adder	4.39
946131	AF1-278 C	6.0369	Adder	7.1
946132	AF1-278 E	3.0026	Adder	3.53
946211	AF1-286 C O1	0.7138	Adder	0.84
946212	AF1-286 E O1	0.4847	Adder	0.57
946221	AF1-287 C	0.8067	Adder	0.95
946222	AF1-287 E	0.5378	Adder	0.63
946381	AF1-302 C	1.5583	Adder	1.83
946382	AF1-302 E	2.0777	Adder	2.44
946401	AF1-304 C	4.9399	Adder	5.81
946402	AF1-304 E	3.2932	Adder	3.87
946421	AF1-306 C	4.3129	Adder	5.07
946422	AF1-306 E	17.2515	Adder	20.3
946431	AF1-307 C	7.1345	50/50	7.1345
946432	AF1-307 E	4.7563	50/50	4.7563
946571	AF1-321 C O1	2.2427	50/50	2.2427
946572	AF1-321 E O1	1.4951	50/50	1.4951
946771	AF1-217 C O2	0.8067	Adder	0.95
946772	AF1-217 E O2	0.5378	Adder	0.63
957001	AF2-001 C O1	2.2427	50/50	2.2427
957002	AF2-001 E O1	1.4951	50/50	1.4951
957011	AF2-002 C O1	1.1213	50/50	1.1213
957012	AF2-002 E O1	0.7476	50/50	0.7476
957161	AF2-010 C	1.7484	Adder	3.88
957162	AF2-010 E	1.1783	Adder	2.62
957451	AF2-039 C	0.4203	Adder	0.93
957452	AF2-039 E	0.2802	Adder	0.62
957512	AF2-045 E	1.4273	Adder	3.17
957561	AF2-050 C	5.5470	50/50	5.5470
957562	AF2-050 E	3.6980	50/50	3.6980
957571	AF2-051 C O1	1.3230	Adder	2.94
957572	AF2-051 E O1	0.6815	Adder	1.51
957581	AF2-052 C	2.2007	Adder	4.89
957582	AF2-052 E	1.0706	Adder	2.38

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957681	AF2-062 C	7.3711	Adder	16.36
957682	AF2-062 E	4.9141	Adder	10.91
957931	AF2-087 C	0.2059	Adder	0.46
957932	AF2-087 E	0.2835	Adder	0.63
957941	AF2-088 C	0.2023	Adder	0.45
957942	AF2-088 E	0.1349	Adder	0.3
957951	AF2-089 C	0.1406	Adder	0.31
957952	AF2-089 E	0.0724	Adder	0.16
957981	AF2-092 C	0.5693	Adder	1.26
957982	AF2-092 E	0.3796	Adder	0.84
958031	AF2-097 C	0.1003	Adder	0.22
958032	AF2-097 E	0.0669	Adder	0.15
958101	AF2-104 C	0.1802	Adder	0.4
958102	AF2-104 E	0.1201	Adder	0.27
958271	AF2-121 C	0.6949	Adder	1.54
958272	AF2-121 E	0.4633	Adder	1.03
958361	AF2-130 C	0.5615	Adder	1.25
958362	AF2-130 E	0.3743	Adder	0.83
958411	AF2-135 C	0.1900	Adder	0.42
958412	AF2-135 E	0.1267	Adder	0.28
958471	AF2-141	0.5067	Adder	1.12
958731	AF2-164 C O1	2.4513	Adder	5.44
958732	AF2-164 E O1	1.6342	Adder	3.63
958741	AF2-165 C	0.5404	Adder	1.2
958742	AF2-165 E	0.3603	Adder	0.8
958751	AF2-166 C	0.5615	Adder	1.25
958752	AF2-166 E	0.3743	Adder	0.83
959061	AF2-197 C O1	1.6039	Adder	3.56
959062	AF2-197 E O1	2.4058	Adder	5.34
959301	AF2-221 C	1.1633	50/50	1.1633
959302	AF2-221 E	1.6065	50/50	1.6065
959401	AF2-231 C	0.1442	Adder	0.32
959402	AF2-231 E	0.0961	Adder	0.21
959441	AF2-235 C	0.2557	Adder	0.57
959442	AF2-235 E	0.1705	Adder	0.38
959461	AF2-237 C	0.2267	Adder	0.5
959462	AF2-237 E	0.1511	Adder	0.34
959471	AF2-238 C	0.5755	Adder	1.28
959472	AF2-238 E	0.3836	Adder	0.85
959481	AF2-239 C	0.4355	Adder	0.97
959482	AF2-239 E	0.3492	Adder	0.78
959491	AF2-240 C	0.5044	Adder	1.12
959492	AF2-240 E	0.4297	Adder	0.95
959501	AF2-241 C	0.5278	Adder	1.17
959502	AF2-241 E	0.4064	Adder	0.9
959521	AF2-243 C	0.4053	Adder	0.9
959522	AF2-243 E	0.2702	Adder	0.6
959741	AF2-265 C	0.4124	Adder	0.92
959742	AF2-265 E	0.3069	Adder	0.68
959792	AF2-270 E	0.6558	50/50	0.6558
959802	AF2-271 E	0.1963	Adder	0.44
959822	AF2-273 E	0.1487	Adder	0.33

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960022	AF2-293 E	0.0448	Adder	0.1
960031	AF2-294 C	0.5171	Adder	1.15
960032	AF2-294 E	0.3447	Adder	0.77
960041	AF2-295 C	0.5478	Adder	1.22
960042	AF2-295 E	0.3652	Adder	0.81
960051	AF2-296 C	0.7607	Adder	1.69
960052	AF2-296 E	0.5072	Adder	1.13
960211	AF2-312 C	0.8320	Adder	1.85
960212	AF2-312 E	0.5547	Adder	1.23
960271	AF2-318 C	0.4709	Adder	1.05
960272	AF2-318 E	0.3139	Adder	0.7
960321	AF2-323 C O1	1.0633	Adder	2.36
960322	AF2-323 E O1	0.7088	Adder	1.57
960391	AF2-330 C	3.7356	Adder	8.29
960392	AF2-330 E	1.6339	Adder	3.63
960451	AF2-336 C O1	0.9489	Adder	2.11
960452	AF2-336 E O1	0.6326	Adder	1.4
960461	AF2-337 C O1	0.9489	Adder	2.11
960462	AF2-337 E O1	0.6326	Adder	1.4
960471	AF2-338 C O1	0.9489	Adder	2.11
960472	AF2-338 E O1	0.6326	Adder	1.4
960481	AF2-339 C O1	0.9489	Adder	2.11
960482	AF2-339 E O1	0.6326	Adder	1.4
960901	AF2-381 C	14.9091	50/50	14.9091
960902	AF2-381 E	7.8459	50/50	7.8459
961141	AF2-405	0.4671	Adder	1.04
961151	AF2-406	3.5031	Adder	7.78
961201	AF2-411 O1	17.8114	Adder	39.54
961211	AF2-412 O1	7.1197	Adder	15.8
961451	AF2-436	0.0528	Adder	0.12
NEWTON	NEWTON	0.5437	Confirmed LTF	0.5437
FARMERCITY	FARMERCITY	0.0283	Confirmed LTF	0.0283
G-007A	G-007A	0.0216	Confirmed LTF	0.0216
VFT	VFT	0.3289	Confirmed LTF	0.3289
CALDERWOOD	CALDERWOOD	0.2863	Confirmed LTF	0.2863
PRAIRIE	PRAIRIE	1.3277	Confirmed LTF	1.3277
CHEOAH	CHEOAH	0.2888	Confirmed LTF	0.2888
EDWARDS	EDWARDS	0.1694	Confirmed LTF	0.1694
TILTON	TILTON	0.3106	Confirmed LTF	0.3106
MADISON	MADISON	0.0302	Confirmed LTF	0.0302
GIBSON	GIBSON	0.2779	Confirmed LTF	0.2779
BLUEG	BLUEG	0.9027	Confirmed LTF	0.9027
TRIMBLE	TRIMBLE	0.2894	Confirmed LTF	0.2894
CATAWBA	CATAWBA	0.2138	Confirmed LTF	0.2138

11.7 Queue Dependencies

The Queue Projects below are listed in one or more indices for the overloads identified in your report. These projects contribute to the loading of the overloaded facilities identified in your report. The percent overload of a facility and cost allocation you may have towards a particular reinforcement could vary depending on the action of these earlier projects. The status of each project at the time of the analysis is presented in the table. This list may change as earlier projects withdraw or modify their requests.

Queue Number	Project Name	Status
AA1-077	Lackawanna 230kV	In Service
AA1-082	E. Towanda 230kV	In Service
AA1-106	Grover II 34.5kV	Withdrawn
AA1-144	East Towanda-Grover 230kV	Engineering and Procurement
AA2-000	N/A	N/A
AA2-132	Thompson 34.5kV	Suspended
AA2-133	Wyalusing 34.5kV	In Service
AB1-082	Potter 46kV	Suspended
AB1-092	Moshannon-East Towanda 230kV	Active
AB1-160	Gold-Sabinsville 115kV	In Service
AB1-182	Bear Creek	Engineering and Procurement
AB2-019	Erie West 345kV	Engineering and Procurement
AC1-025	Dale Summit	In Service
AC1-071	Paupack-Lackawanna 230kV	Suspended
AD1-108	Grover 34 kV	In Service
AD1-109	Canton 34.5 kV	In Service
AD1-110	North Meshoppen 34.5 kV	In Service
AD1-142	Milan 34.5 kV	In Service
AD1-154	Timblin 34.5 kV	Active
AD2-055	Moshannon-East Towanda 230 kV	Active
AD2-133	Eagle Valley 115kV	Active
AE1-051	East Carbondale-Lackawanna 69kV	Active
AE1-053	Meyersdale North	Active
AE1-059	Stanton-Summit 230 kV	Active
AE1-116	Somerset Windpower 23 kV	Active
AE1-123	Emlenton 34.5 kV	Engineering and Procurement
AE1-128	Bedford North-Wills Mounain 115 kV	Active
AE1-147	Bellefonte 46 kV	Engineering and Procurement
AE1-160	Venango 34.5 kV	Engineering and Procurement
AE2-001	Nittany-Zion 46 kV	Active
AE2-055	Shingletown-Boalsburg 46 kV	Suspended
AE2-074	Potter 46 kV	Active
AE2-113	Farmers Valley-Ridgeway 115 kV	Active
AE2-117	ABW Tap-Alexandria 46 kV	Active
AE2-118	ABW Tap-Williamsburg 46 kV	Active
AE2-120	Graymont-Zion 46 kV	Active
AE2-121	Milesburg-Tanney Junction 46 kV	Active
AE2-126	Dubois-Curwensville 34.5 kV	Active
AE2-129	Philipsburg-Clarence 34.5 kV	Active

Queue Number	Project Name	Status
AE2-131	Philipsburg-Karthaus 34.5	Active
AE2-139	East Towanda-Grover 230 kV	Active
AE2-224	Bearrock-Johnstown 230 kV	Active
AE2-248	Fillmore-Thompson Farm 46 kV	Active
AE2-262	Moshannon-Milesburg 230 kV	Active
AE2-263	Moshannon-Milesburg 230 kV	Active
AE2-264	Altoona-Raystown 230 kV	Active
AE2-299	Erie East 230 kV	Active
AE2-316	Brookville-Squab Hollow 138 kV	Active
AE2-344	Edinboro South-Venango Junction 115 kV	Active
AF1-006	Fairview East 34.5 kV	Active
AF1-039	Listonburg-Highpoint 24.9 kV	Active
AF1-043	Moshannon-East Towanda 230 kV	Active
AF1-068	Boalsburg-Centre Hall 46 kV	Active
AF1-086	Madera-Westover South 115 kV	Active
AF1-094	Union City-Cambridge Springs 34.5 kV	Active
AF1-096	Titusville-Oil Creek 34.5 kV	Active
AF1-098	Four Mile Jct-Corry East 115 kV	Active
AF1-099	Moshannon-Milesburg 230 kV	Active
AF1-100	Shawville-Moshannon 230 kV	Active
AF1-103	Warren 34.5 kV	Active
AF1-104	Erie West 34.5 kV	Active
AF1-106	East Sayre 34.5 kV	Active
AF1-112	Centre Hall-Boalsburg 46 kV	Active
AF1-132	Shingletown-Boalsburg 46 kV	Active
AF1-134	Philipsburg-Madera 34.5 kV	Active
AF1-140	Claysburg 23 kV	Engineering and Procurement
AF1-142	Moshannon-Milesburg 230 kV	Active
AF1-143	Lick Run 115 kV	Active
AF1-149	Graymont-Zion 46 kV	Active
AF1-153	Motion-Ridgeway 46 kV	Active
AF1-155	Paper City-Wilcox 46 kV	Engineering and Procurement
AF1-167	West Freedom-C&K Coal 25 kV	Active
AF1-170	Springboro-Venango Junction 115 kV	Active
AF1-177	Warren 115 kV	Partially in Service - Under Construction
AF1-181	Shawville 3 230 kV	Partially in Service - Under Construction
AF1-182	Shawville 4 230 kV	Partially in Service - Under Construction
AF1-183	Shawville 1 230 kV	Partially in Service - Under Construction
AF1-198	Blossburg #1 CT 34.5 kV	Partially in Service - Under Construction
AF1-210	Burma 23 kV	Engineering and Procurement
AF1-214	Nittany-Zion 46 kV	Active
AF1-217	Edinboro -Cambridge Springs 34.5 kV	Active
AF1-220	Ridgway-Whetstone 115 kV	Active
AF1-232	Allegheny-Somerset 115 kV	Active
AF1-240	Timblin 34.5 kV	Active
AF1-272	Lucerne 115 kV	Active
AF1-273	Allegheny 115 kV	Active
AF1-276	Lewis Run-Pierce Brook 230 kV	Active
AF1-277	Lewis Run-Pierce Brook 2 230 kV	Active
AF1-278	Lewis Run-Pierce Brook 3 230 kV	Active
AF1-286	East Sayre 34.5 kV II	Active
AF1-287	Edinboro South 34.5 kV II	Active

Queue Number	Project Name	Status
AF1-302	Brookville-Squab Hollow 138 kV	Active
AF1-304	Titusville-Grandview 115 kV	Active
AF1-306	Squab Hollow 230 kV	Active
AF1-307	Seward-Jackson Rd 115 kV	Active
AF1-321	Hooversville 115 kV I	Active
AF2-001	Hooversville 115 kV II	Active
AF2-002	Hooversville 115 kV III	Active
AF2-006	Jermyn Tap-Brownell 69 kV	Active
AF2-007	Tinker Tap-East Carbondale 69 kV	Active
AF2-010	Union City-Titusville 115 kV	Active
AF2-039	Shawville-Clearfield 34.5 kV	Active
AF2-045	Cambria Nug 115 kV	Active
AF2-050	Bearrock-Johnstown 230 kV	Active
AF2-051	Geneva 115 kV	Active
AF2-052	Farmers Valley-Ridgeway 115 kV	Active
AF2-062	Lewis Run-Pierce Brook 230 kV	Active
AF2-087	East Altoona-Pinecroft 12.47 kV	Active
AF2-088	Shawville-Clearfield 34.5 kV II	Active
AF2-089	Titusville 34.5 kV	Active
AF2-092	Snake Spring-Bedford Area 23 kV	Active
AF2-097	Fairview East 34.5 kV II	Active
AF2-104	Somerset 23 kV	Active
AF2-121	Philipsburg-Shawville 34.5 kV	Active
AF2-130	Wolfs Corners 34.5 kV	Active
AF2-135	Rockwood-Confluence 23 kV	Active
AF2-141	Lick Run 115 kV	Active
AF2-164	Handsome Lake 345 kV	Active
AF2-165	Clark Summit-Emlenton 34.5 kV	Active
AF2-166	Clark Summit-Emlenton 34 kV	Active
AF2-170	Erie West-Springboro 34.5 kV	Active
AF2-197	East Towanda 115 kV	Active
AF2-221	Scalp Level 22.9 kV	Active
AF2-231	Belleville 12.47 kV	Active
AF2-235	Titusville-Oil Creek 34.5 kV	Active
AF2-237	Union City-Cambridge Springs 34.5 kV	Active
AF2-238	Mansfield-South Troy 34.5 kV	Active
AF2-239	Wyalusing-Hollenback WRC 34.5 kV	Active
AF2-240	North Orwell 12.47 kV	Active
AF2-241	Athens-Milan 34.5 kV	Active
AF2-243	Clark Summit 34.5 kV	Active
AF2-265	South Troy-Athens 34.5 kV	Active
AF2-270	Bedford South RCB-Bedford Area 23 kV	Active
AF2-271	Pemberton-Sinking Valley 12.47 kV	Active
AF2-273	Sligo 25 kV	Active
AF2-282	Edelle 12.47 kV	Active
AF2-283	Greenfield 12.47 kV	Active
AF2-285	W. Damascus 12.47 kV	Active
AF2-293	Beech Creek 46 kV	Active
AF2-294	Thompson 34.5 kV	Active
AF2-295	Wilcox-Paper City 46 kV	Active
AF2-296	Madera 34.5 kV	Active
AF2-312	Carrolltown-Patton 46 kV	Active

Queue Number	Project Name	Status
AF2-318	East Towanda-New Albany 34.5 kV	Active
AF2-323	Geneva-Franklin Tap 115 kV	Active
AF2-330	Claysburg-Summit 115 kV	Active
AF2-336	Snake Spring 115 kV	Active
AF2-337	Snake Spring 115 kV	Active
AF2-338	Snake Spring-Saxton 115 kV	Active
AF2-339	Snake Spring-Saxton 115 kV	Active
AF2-380	Karns City-Bear Creek 25 kV	Active
AF2-381	Bedford North-Central City West 115 kV	Active
AF2-405	East Sayre 34.5 kV III	Active
AF2-406	Sayre 115 kV	Active
AF2-411	Mainesburg 345 kV	Active
AF2-412	Mainesburg 115 kV	Active
AF2-417	West Damascus Tap-West Damascus 69 kV	Active
AF2-436	Wyalusing 34.5 kV II	Active
AF2-437	Oxbow 34.5 kV III	Active
V3-030	St. Benedict-Patton 46kV	In Service
X1-109	E. Towanda 230kV	In Service
X3-003	Mehoopany II 115 kV	In Service
Y1-033	Penn Mar-Rock Wood 115kV	In Service
Y1-047	North Meshoppen 34.5kV	In Service
Y2-042	Oxbow 25kV	In Service
Y2-055	Elm Street 34.5kV	Withdrawn
Y2-089	Lackawanna 230kV	In Service
Y3-092	Erie West 345kV	Engineering and Procurement
Z1-038	Florey Knob 34.5kV	Withdrawn
Z1-069	Gold-Sabinsville 115kV	In Service
Z1-091	Lenox 34kV	Withdrawn
Z1-092	Milan 34kV	In Service
Z1-110	Grover 34kV	In Service
Z2-011	Canton 34.5kV	In Service
Z2-104	Oxbow 25kV II	In Service
Z2-107	East Carbondale-Lackawanna 69kV	Suspended
Z2-108	Meyersdale North 115kV	In Service

11.8 Contingency Descriptions - Primary POI

Contingency Name	Contingency Definition
PN-P2-2-PN-230-001T	CONTINGENCY 'PN-P2-2-PN-230-001T' /* HOMER CITY NORTH 230KV BUS DISCONNECT BRANCH FROM BUS 200769 TO BUS 200767 TO BUS 202640 CKT N/* 26HOMER CY 345 26HOMER CT 230 26HOMERCITYN 23.00 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200807 CKT 1 /* 26HOMER CT 230 26PIERC230 230 REMOVE MACHINE 1 FROM BUS 200809 /* 26SITHE 138 DISCONNECT BUS 200807 /* 26PIERC230 230 DISCONNECT BUS 200808 /* 26PIERC138 138 DISCONNECT BUS 200809 /* 26SITHE 138 END
PN-P2_3-PN-230-0252-C	CONTINGENCY 'PN-P2_3-PN-230-0252-C' /* SHELOCTA 230 KV STUCK BREAKER (HOMER CITY/XFMR) OPEN BRANCH FROM BUS 200795 TO BUS 200767 CKT 1 /* 26SHELOCTA 230.00 26HOMER CT 230.00 OPEN BRANCH FROM BUS 200795 TO BUS 200739 CKT 2 /* 26SHELOCTA 230.00 26SHELOCTA 115.00 END
PN-P2_3-PN-230-0252-A	CONTINGENCY 'PN-P2_3-PN-230-0252-A' /* SHELOCTA 230 KV STUCK BREAKER (KEYSTONE/XFMR) OPEN BRANCH FROM BUS 200795 TO BUS 200810 CKT 1 /* 26SHELOCTA 230.00 26KEYSTONE 230.00 OPEN BRANCH FROM BUS 200795 TO BUS 200739 CKT 2 /* 26SHELOCTA 230.00 26SHELOCTA 115.00 END
PL_P42_001057	CONTINGENCY 'PL_P42_001057' /* LACK-PAUP 230KV STUCK BREAKER CONNECTED TO LACK TR2 DISCONNECT BRANCH FROM BUS 208009 TO BUS 925950 CKT 1 /* LACK-AC1-071 TAP 230 DISCONNECT BRANCH FROM BUS 208009 TO BUS 211681 CKT 2 /* LACK-LACK 230/69KV T2 DISCONNECT BRANCH FROM BUS 208009 TO BUS 200074 CKT 4 /* LACK-LACKAW 500/230KV T4 END
PL_P42_001056	CONTINGENCY 'PL_P42_001056' /* LACK-SUMT 2 230KV STUCK BREAKER CONNECTED TO LACK TR1 DISCONNECT BRANCH FROM BUS 208009 TO BUS 200074 CKT 3 /* LACK-LACKAW 500- 230 T3 DISCONNECT BRANCH FROM BUS 208009 TO BUS 208090 CKT 2 /* LACK-SUMT 2 230 DISCONNECT BRANCH FROM BUS 208009 TO BUS 211681 CKT 1 /* LACK-LACK 230-69 T1 END

Contingency Name	Contingency Definition
PL_P42_001055	CONTINGENCY 'PL_P42_001055' /* LACK-SUMT 1 230KV STUCK BREAKER CONNECTED TO LACK TR1 DISCONNECT BRANCH FROM BUS 208009 TO BUS 200074 CKT 3 /* LACK-LACKAW 500-230 T3 DISCONNECT BRANCH FROM BUS 208009 TO BUS 211681 CKT 1 /* LACK-LACK 230-69 T1 DISCONNECT BRANCH FROM BUS 208009 TO BUS 208090 CKT 1 /* LACK-SUMT 1 230 END
AP-P1-2-WP-230-324T_FSA_A-B	CONTINGENCY 'AP-P1-2-WP-230-324T_FSA_A-B' /* MOSHANNON-MARSHALL 230KV APS-PN TIE DISCONNECT BRANCH FROM BUS 235220 TO BUS 200908 CKT 1 /* 01MOSHAN 230 26CHAPMAN+ 230 DISCONNECT BRANCH FROM BUS 200908 TO BUS 919490 CKT 1 /* 26CHAPMAN+ 230 AA2-000 TAP 230 END
PL_P12_000193	CONTINGENCY 'PL_P12_000193' /* NMES-LACK 230KV LINE DISCONNECT BRANCH FROM BUS 200677 TO BUS 200706 CKT 3 /* NO MESHO-N.MESHPN 115-230 DISCONNECT BRANCH FROM BUS 200706 TO BUS 200708 CKT 1 /* N.MESHPN-OXBOW 230 DISCONNECT BRANCH FROM BUS 200708 TO BUS 208009 CKT 1 /* OXBOW-LACK 230 DISCONNECT BRANCH FROM BUS 200708 TO BUS 200709 CKT 1 /* OXBOW-OXBOW 230-34.5 END
AP-P1-2-WP-230-005B	CONTINGENCY 'AP-P1-2-WP-230-005B' /* QUEUE AE2-262 - MOSHANNON 230KV DISCONNECT BRANCH FROM BUS 942490 TO BUS 235219 CKT 1 /* AE2-262 TAP 230 01MILESB 230 END
PN-P1-2-PN-230-102T	CONTINGENCY 'PN-P1-2-PN-230-102T' /* NORTH MESHOPPEN - LACKAWANNA 230KV RTEP B2952 DISCONNECT BRANCH FROM BUS 200706 TO BUS 200708 CKT 1 /* 26N.MESHPN 230 26OXBOW 230 DISCONNECT BRANCH FROM BUS 200708 TO BUS 208009 CKT 1 /* 26OXBOW 230 LACK 230 DISCONNECT BRANCH FROM BUS 200708 TO BUS 200709 CKT 1 /* 26OXBOW 230 26OXBOW 35 END
PN-P2_3-PN-230-0252-B	CONTINGENCY 'PN-P2_3-PN-230-0252-B' /* SHELOCTA 230 KV STUCK BREAKER (KEYSTONE/HOMER CITY) OPEN BRANCH FROM BUS 200795 TO BUS 200810 CKT 1 /* 26SHELOCTA 230.00 26KEYSTONE 230.00 OPEN BRANCH FROM BUS 200795 TO BUS 200767 CKT 1 /* 26SHELOCTA 230.00 26HOMER CT 230.00 END

Contingency Name	Contingency Definition
ATSI-P2-3-CEI-345-004D	CONTINGENCY 'ATSI-P2-3-CEI-345-004D' /* ERIE WEST 345KV BKR 8 DISCONNECT BRANCH FROM BUS 200599 TO BUS 200600 CKT 1 /* 26ERIE W 345 26ERIE SO 345 DISCONNECT BRANCH FROM BUS 200599 TO BUS 238547 CKT 1 /* 26ERIE W 345 02AT 345 DISCONNECT BRANCH FROM BUS 238547 TO BUS 239036 CKT 1 /* 02AT 345 02PERRY 345 DISCONNECT BRANCH FROM BUS 238547 TO BUS 239082 CKT 1 /* 02AT 345 02S8-ATT 345 DISCONNECT BUS 200600 /* 26ERIE SO 345 DISCONNECT BUS 238547 /* 02AT 345 END
PL_P13_100348	CONTINGENCY 'PL_P13_100348' /* LACK 500/230KV T4 DISCONNECT BRANCH FROM BUS 200074 TO BUS 208009 CKT 4 /* LACK-LACKAW 500- 230 T3 END
AP-P2-2-WP-230-005T	CONTINGENCY 'AP-P2-2-WP-230-005T' /* SHINGLETOWN #2 230KV BUS DISCONNECT BRANCH FROM BUS 235248 TO BUS 235970 CKT 1 /* 01SHINGL 230 01DALE 230 DISCONNECT BRANCH FROM BUS 235248 TO BUS 200513 CKT 1 /* 01SHINGL 230 26LEWISTWN 230 DISCONNECT BRANCH FROM BUS 235248 TO BUS 236711 CKT 82 /* 01SHINGL 230 01SHINGLTN 46 DISCONNECT BUS 237058 /*SHINGLETOWN 230 KV CAPACITOR END
PN-P2-3-PN-230-9I	CONTINGENCY 'PN-P2-3-PN-230-9I' /* 579 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200807 CKT 1 /* 26HOMER CT 230 26PIERC230 230 DISCONNECT BRANCH FROM BUS 200807 TO BUS 200808 CKT 1 /* 26PIERC230 230 26PIERC138 138 DISCONNECT BRANCH FROM BUS 200808 TO BUS 200809 CKT 1 /* 26PIERC138 138 26SITHE 138 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200769 TO BUS 202640 CKT N/* 26HOMER CT 230 26HOMER CY 345 26HOMERCITYN 23.00 REMOVE MACHINE 1 FROM BUS 200809 /* 26SITHE 138 END
PL_P13_100347	CONTINGENCY 'PL_P13_100347' /* LACK 500/230KV T3 DISCONNECT BRANCH FROM BUS 200074 TO BUS 208009 CKT 3 /* LACK-LACKAW 500- 230 T3 END

Contingency Name	Contingency Definition
PN-P2-3-PN-115-23D	CONTINGENCY 'PN-P2-3-PN-115-23D' /* 622 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200568 CKT 6 /* 26ERIE SO. 115 26ERIE SO. 230 DISCONNECT BRANCH FROM BUS 200568 TO BUS 200600 CKT 5 /* 26ERIE SO. 230 26ERIE SO 345 DISCONNECT BRANCH FROM BUS 200568 TO BUS 200641 CKT 7 /* 26ERIE SO. 230 26ERIE S C 35 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200571 CKT 1 /* 26ERIE SO. 115 26UNION CY 115 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200572 CKT 1 /* 26ERIE SO. 115 26EDINB S. 115 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200850 CKT 1 /* 26ERIE SO. 115 26GESG TAP 115 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200589 CKT 1 /* 26ERIE SO. 115 26FR RD. W 115 DISCONNECT BRANCH FROM BUS 200589 TO BUS 200635 CKT 5 /* 26FR RD. W 115 26FR RD W. 35 REDUCE BUS 200568 SHUNT BY 100 PERCENT /* 26ERIE SO. 230 END
PN-P1-2-PN-230-013A	CONTINGENCY 'PN-P1-2-PN-230-013A' /* EAST TOWANDA - NORTH MESHOPPEN 230KV DISCONNECT BRANCH FROM BUS 200675 TO BUS 200924 CKT 1 /* 26E.TWANDA 230 26CANYON 230 DISCONNECT BRANCH FROM BUS 200924 TO BUS 200706 CKT 1 /* 26CANYON 230 26N.MESHPN 230 END
AP-P1-2-WP-230-322T	CONTINGENCY 'AP-P1-2-WP-230-322T' /* SHINGLETOWN-SHAWVILLE 230KV APS-PN TIE DISCONNECT BRANCH FROM BUS 235248 TO BUS 200726 CKT 1 /* 01SHINGL 230 26SHAWVL 2 230 END
PL_P13_100329	CONTINGENCY 'PL_P13_100329' /* LACK 230/69KV LACK T1 DISCONNECT BRANCH FROM BUS 200074 TO BUS 208009 CKT 3 /* LACK-LACKAW 500- 230 T3 DISCONNECT BRANCH FROM BUS 211681 TO BUS 208009 CKT 1 /* LACK-LACK 230-69 T1 END
PL_P13_100328	CONTINGENCY 'PL_P13_100328' /* LACK 230/69KV T2 DISCONNECT BRANCH FROM BUS 211681 TO BUS 208009 CKT 2 /* LACK T2 DISCONNECT BRANCH FROM BUS 200074 TO BUS 208009 CKT 4 /* LACK T4 END

Contingency Name	Contingency Definition
PN-P1-2-PN-345-107T	CONTINGENCY 'PN-P1-2-PN-345-107T' /* ERIE WEST - ASHTABULA - PERRY 345KV DISCONNECT BRANCH FROM BUS 200599 TO BUS 238547 CKT 1 /* 26ERIE W 345 02AT 345 DISCONNECT BRANCH FROM BUS 238547 TO BUS 239082 CKT 1 /* 02AT 345 02S8-ATT 345 DISCONNECT BRANCH FROM BUS 238547 TO BUS 239036 CKT 1 /* 02AT 345 02PERRY 345 DISCONNECT BUS 238547 /* 02AT 345 END
PN-P2-3-PN-230-9E	CONTINGENCY 'PN-P2-3-PN-230-9E' /* 575 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200769 TO BUS 202641 CKT S/* 26HOMER CT 230 26HOMER CY 345 26HOMERCITYS 23.00 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200837 CKT 1 /* 26HOMER CT 230 26HOMER C1 20 REMOVE MACHINE 1 FROM BUS 200837 /* 26HOMER C1 20 END
PN-P1-3-PN-230-006	CONTINGENCY 'PN-P1-3-PN-230-006' /* ERIE SOUTH #8 345/230KV XFMR DISCONNECT BRANCH FROM BUS 200600 TO BUS 200819 CKT 8 /* 26ERIE SO 345 26ERIE SE 230 END
PN-P1-3-PN-230-008	CONTINGENCY 'PN-P1-3-PN-230-008' /* ERIE SOUTH #6 230/115KV XFMR FAULT DISCONNECT BRANCH FROM BUS 200568 TO BUS 200567 CKT 6 /* 26ERIE SO. 230 26ERIE SO. 115 DISCONNECT BRANCH FROM BUS 200568 TO BUS 200918 CKT ZB /* 26ERIE SO. 230 26ERIE S TIE230 DISCONNECT BRANCH FROM BUS 200568 TO BUS 200641 CKT 7 /* 26ERIE SO. 230 26ERIE S C 35 DISCONNECT BRANCH FROM BUS 200600 TO BUS 200568 CKT 5 /* 26ERIE SO 345 26ERIE SO. 230 REDUCE BUS 200568 SHUNT BY 100 PERCENT /* 26ERIE SO. 230 DISCONNECT BUS 200568 /* 26ERIE SO. 230 END
PN-P1-3-PN-230-004A	CONTINGENCY 'PN-P1-3-PN-230-004A' /* HOMER CITY SOUTH 345/230KV XFMR DISCONNECT BRANCH FROM BUS 200769 TO BUS 200767 TO BUS 202641 CKT S/* 26HOMER CY 345 26HOMER CT 230 26HOMERCITYS 23.00 END
PN-P1-3-PN-500-001AT	CONTINGENCY 'PN-P1-3-PN-500-001AT' /* KEYSTONE #3 500/230 KV XFMR OPEN BRANCH FROM BUS 200011 TO BUS 200810 CKT 3 /* KEYSTONE 500.00 26KEYSTONE 230.00 END

Contingency Name	Contingency Definition
Base Case	
200908 26CHAPMAN+ 230 919490 AA2-000 TAP 230 1	CONTINGENCY '200908 26CHAPMAN+ 230 919490 AA2-000 TAP 230 1' OPEN BRANCH FROM BUS 200908 TO BUS 919490 CKT 1 END
PN-P1-2-PN-230-101T	CONTINGENCY 'PN-P1-2-PN-230-101T' /* EAST TOWANDA - HILLSIDE 230KV DISCONNECT BRANCH FROM BUS 200675 TO BUS 130763 CKT 1 /* 26E.TWANDA 230 HILSD230 230 END
PJM500_PN_P4-500-001A	CONTINGENCY 'PJM500_PN_P4-500-001A' /* KEYSTONE 500KV BKR 1 DISCONNECT BRANCH FROM BUS 200011 TO BUS 200810 CKT 3 /* KEYSTONE 500 26KEYSTONE 230 REMOVE MACHINE H FROM BUS 200033 /* KEYS G2 20 REMOVE MACHINE L FROM BUS 200033 /* KEYS G2 20 DISCONNECT BUS 200033 /* KEYS G2 20 END
PN-P1-3-PN-230-003A	CONTINGENCY 'PN-P1-3-PN-230-003A' /* HOMER CITY NORTH 345/230KV XFMR DISCONNECT BRANCH FROM BUS 200769 TO BUS 200767 TO BUS 202640 CKT N/* 26HOMER CY 345 26HOMER CT 230 26HOMERCITYN 23.00 END
AP-P1-3-WP-230-005	CONTINGENCY 'AP-P1-3-WP-230-005' /* MILESBURG #82 230/46KV XFMR DISCONNECT BRANCH FROM BUS 235219 TO BUS 236745 CKT 82 /* 01MILESB 230 01MILESBG 46 DISCONNECT BRANCH FROM BUS 942490 TO BUS 235219 CKT 1 /* AE2-262 TAP 230 01MILESB 230 END
PJM500_PN_P4-500-001D	CONTINGENCY 'PJM500_PN_P4-500-001D' /* KEYSTONE 500KV BKR 4 DISCONNECT BRANCH FROM BUS 200011 TO BUS 200810 CKT 3 /* KEYSTONE 500 26KEYSTONE 230 REMOVE MACHINE H FROM BUS 200032 /* KEYS G1 20 REMOVE MACHINE L FROM BUS 200032 /* KEYS G1 20 DISCONNECT BUS 200032 /* KEYS G1 20 END

Contingency Name	Contingency Definition
ATSI-P1-2-CEI-345-700T	CONTINGENCY 'ATSI-P1-2-CEI-345-700T' /* PN/ATSI ERIE WEST - ASHTABULA - PERRY 345KV DISCONNECT BRANCH FROM BUS 239036 TO BUS 238547 CKT 1 /* 02PERRY 345 02AT 345 DISCONNECT BRANCH FROM BUS 238547 TO BUS 239082 CKT 1 /* 02AT 345 02S8-ATT 345 DISCONNECT BRANCH FROM BUS 239082 TO BUS 238544 CKT 8 /* 02S8-ATT 345 02ASH_3 138 DISCONNECT BRANCH FROM BUS 238547 TO BUS 200599 CKT 1 /* 02AT 345 26ERIE W 345 END
200908 26CHAPMAN+ 230 235220 01MOSHAN 230 230 1	CONTINGENCY '200908 26CHAPMAN+ 230 235220 01MOSHAN 230 230 1' OPEN BRANCH FROM BUS 200908 TO BUS 235220 CKT 1 END
PN-P2-3-PN-230-9G-A	CONTINGENCY 'PN-P2-3-PN-230-9G-A' /* HOMER CITY 230 KV STUCK BREAKER 208 (HOOVERSVILLE/SHELOCTA) DISCONNECT BRANCH FROM BUS 200767 TO BUS 200768 CKT 1 /* 26HOMER CT 230 26QUEMAHON 230 DISCONNECT BRANCH FROM BUS 200768 TO BUS 200796 CKT 1 /* 26QUEMAHON 230 26HOOVRSVL 230 DISCONNECT BRANCH FROM BUS 200743 TO BUS 200796 CKT 3 /* 26HOOVERSV 115 26HOOVRSVL 230 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200795 CKT 1 /* 26HOMER CT 230 26SHELOCTA 230 END
PN-P1_2-PN-230-0103	CONTINGENCY 'PN-P1_2-PN-230-0103' /* SHELOCTA - KEYSTONE 230 KV LINE OPEN BRANCH FROM BUS 200795 TO BUS 200810 CKT 1 /* 26SHELOCTA 230.00 26KEYSTONE 230.00 END
PN-P1-3-PN-230-027	CONTINGENCY 'PN-P1-3-PN-230-027' /* ERIE SOUTH #7 XFMR FAULT DISCONNECT BUS 200568 /* 26ERIE SO. 230 END

12 Short Circuit Analysis - Primary POI

Short Circuit analysis will be provided in the System Impact phase.

13 Summer Peak - Load Flow Analysis - Secondary POI

The Queue Project AF2-197 was evaluated as a 100.9 MW (Capacity 40.3 MW) injection at the East Towanda 230 kV substation in the PENELEC area. Project AF2-197 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF2-197 was studied with a commercial probability of 53.0 %. Potential network impacts were as follows:

13.1 Generation Deliverability

(Single or N-1 contingencies for the Capacity portion only of the interconnection)

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE CT LOADIN G %	POST PROJE CT LOADIN G %	AC D C	MW IMPAC T
99344856	200706	26N.MESH PN	230.0	PENELE C	200708	26OXBO W	230.0	PENELE C	1	AP-P1-2-WP-230-324T_FSA_A-B	single	984.0	98.91	100.95	DC	21.0

13.2 Multiple Facility Contingency

(Double Circuit Tower Line, Fault with a Stuck Breaker, and Bus Fault contingencies for the full energy output)

None

13.3 Contribution to Previously Identified Overloads

(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)

ID	FRO M BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE CT LOADIN G %	POST PROJE CT LOADIN G %	AC D C	MW IMPAC T
101145523	200674	26TOWAN DA	115.0	PENEL EC	200677	26NO MESHO	115.0	PENEL EC	1	PN-P1-2-PN-230-013A	single	202.0	161.61	165.58	DC	8.02
99344276	200675	26E.TWAN DA	230.0	PENEL EC	130763	HILSD230	230.0	NYISO	1	PL_P42_000444	breaker	531.0	123.53	131.73	DC	43.62
99344277	200675	26E.TWAN DA	230.0	PENEL EC	130763	HILSD230	230.0	NYISO	1	PL_P42_000445	breaker	531.0	123.53	131.73	DC	43.62
99344591	200675	26E.TWAN DA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	615.0	136.69	139.47	DC	18.6
99344592	200675	26E.TWAN DA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	Base Case	single	515.0	133.04	135.98	DC	15.98
99344822	200675	26E.TWAN DA	230.0	PENEL EC	130763	HILSD230	230.0	NYISO	1	PN-P1-2-PN-230-102T	single	531.0	105.34	108.59	DC	17.28
155517461	200675	26E.TWAN DA	230.0	PENEL EC	130763	HILSD230	230.0	NYISO	1	PL_P42_101231	breaker	531.0	123.53	131.73	DC	43.62
99344525	200676	26E.SAYRE	115.0	PENEL EC	130836	N.WAV115	115.0	NYISO	1	PN-P1-2-PN-230-101T	single	128.0	108.37	111.79	DC	4.37
99343911	200706	26N.MESH PN	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	AP-P2-2-WP-230-005T	bus	984.0	119.04	123.81	DC	46.72
99343926	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	AP-P2-2-WP-230-005T	bus	984.0	120.64	124.41	DC	47.24
99344367	200767	26HOMER CT	230.0	PENEL EC	200793	26SEWARD 2	230.0	PENEL EC	1	PN-P2-3-PN-230-9G-A	breaker	813.0	106.65	107.14	DC	8.99
99343894	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	PN-P2-2-PN-230-001T	bus	824.0	142.61	143.53	DC	16.84
99344138	200769	26HOMER CY	345.0	PENEL EC	999392	26HOMER CT	1.0	PENEL EC	N	PN-P2-3-PN-230-9E	breaker	807.0	162.14	163.07	DC	16.85
99344208	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	PN-P2-3-PN-230-9I	breaker	824.0	142.61	143.53	DC	16.84
99344108	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	ATSI-P2-3-CEI-345-004D	breaker	917.0	189.02	189.73	DC	14.3
99344237	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PJM500_PN_P4-500-001A	breaker	635.0	141.9	142.52	DC	8.6

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE CT LOADING %	POST PROJE CT LOADING %	AC DC	MW IMPACT
99344238	200810	26KEYSTONE	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PJM500_PN_P4-500-001D	breaker	635.0	141.9	142.52	DC	8.6
99344415	200819	26ERIE SE	230.0	PENEL EC	200600	26ERIE SO	345.0	PENEL EC	8	PN-P2-3-PN-115-23D	breaker	866.0	101.51	102.0	DC	9.3
98767556	200908	26CHAPMAN+	230.0	PENEL EC	235220	01MOSHAN	230.0	AP	1	Base Case	single	520.0	119.88	121.24	DC	7.1
99344635	200924	26CANYON	230.0	PENEL EC	200706	26N.MESH PN	230.0	PENEL EC	1	Base Case	single	546.0	124.43	127.2	DC	15.98
99344636	200924	26CANYON	230.0	PENEL EC	200706	26N.MESH PN	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	666.0	125.35	127.92	DC	18.6
99344342	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	3	PL_P42_001057	breaker	1167.0	117.29	118.27	DC	25.04
99344399	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	4	PL_P42_001056	breaker	1145.0	104.33	105.23	DC	22.58
99344400	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	4	PL_P42_001055	breaker	1145.0	104.33	105.23	DC	22.58
99344801	919490	AA2-000 TAP	230.0	PENEL EC	200908	26CHAPMAN+	230.0	PENEL EC	1	Base Case	single	546.0	114.17	115.47	DC	7.1
99343897	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P2-2-PN-230-001T	bus	824.0	142.6	143.52	DC	16.84
99344213	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P2-3-PN-230-9I	breaker	824.0	142.6	143.52	DC	16.84
99344143	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	PN-P2-3-PN-230-9E	breaker	807.0	162.12	163.06	DC	16.85
99344242	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PJM500_PN_P4-500-001A	breaker	634.0	141.38	142.0	DC	8.6
99344243	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PJM500_PN_P4-500-001D	breaker	634.0	141.38	142.0	DC	8.6

13.4 Potential Congestion due to Local Energy Deliverability

PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.

Note: Only the most severely overloaded conditions are listed below. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed which shall study all overload conditions associated with the overloaded element(s) identified.

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE CT LOADING %	POST PROJE CT LOADING %	AC DC	MW IMPACT
99344923	200568	26ERIE SO.	230.0	PENEL EC	200600	26ERIE SO	345.0	PENEL EC	5	PN-P1-3-PN-230-006	operation	776.0	108.64	109.13	DC	8.54
101145522	200674	26TOWANDA	115.0	PENEL EC	200677	26NO MESHO	115.0	PENEL EC	1	PN-P1-2-PN-230-013A	operation	202.0	190.96	200.54	DC	20.04
99344584	200675	26E.TWANDA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	Base Case	operation	515.0	159.25	165.77	DC	39.95
99344585	200675	26E.TWANDA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	operation	615.0	153.24	160.34	DC	46.49

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE CT LOADI NG %	POST PROJE CT LOADI NG %	AC DC	MW IMPA CT
99344586	200675	26E.TWANDA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	200908 26CHAPMA N+ 230 235220 01MOSHAN 230 230 1	operati on	615.0	153.24	160.34	DC	46.49
99344587	200675	26E.TWANDA	230.0	PENEL EC	200924	26CANYON	230.0	PENEL EC	1	200908 26CHAPMA N+ 230 919490 AA2-000 TAP 230 1	operati on	615.0	153.24	160.34	DC	46.49
99344817	200675	26E.TWANDA	230.0	PENEL EC	130763	HILSD230	230.0	NYISO	1	PL_P12_000 193	operati on	531.0	123.51	131.71	DC	43.62
99344524	200676	26E.SAYRE	115.0	PENEL EC	130836	N.WAV115	115.0	NYISO	1	PN-P1-2-PN- 230-101T	operati on	128.0	123.45	131.98	DC	10.92
99344849	200706	26N.MESHP N	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	Base Case	operati on	855.0	111.93	117.28	DC	45.58
99344850	200706	26N.MESHP N	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	200908 26CHAPMA N+ 230 919490 AA2-000 TAP 230 1	operati on	984.0	113.23	118.59	DC	52.49
99344851	200706	26N.MESHP N	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	200908 26CHAPMA N+ 230 235220 01MOSHAN 230 230 1	operati on	984.0	113.23	118.59	DC	52.49
99344852	200706	26N.MESHP N	230.0	PENEL EC	200708	26OXBOW	230.0	PENEL EC	1	AP-P1-2- WP-230- 324T_FSA_A -B	operati on	984.0	113.23	118.59	DC	52.49
99344869	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	AP-P1-2- WP-230- 324T_FSA_A -B	operati on	984.0	112.24	117.65	DC	53.07
99344870	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	200908 26CHAPMA N+ 230 919490 AA2-000 TAP 230 1	operati on	984.0	112.24	117.65	DC	53.07
99344871	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	200908 26CHAPMA N+ 230 235220 01MOSHAN 230 230 1	operati on	984.0	112.24	117.65	DC	53.07
99344872	200708	26OXBOW	230.0	PENEL EC	208009	LACK	230.0	PPL	1	Base Case	operati on	855.0	108.45	112.68	DC	46.09
99344534	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	PN-P1-2-PN- 345-107T	operati on	917.0	196.96	197.66	DC	14.26
99344535	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	ATSI-P1-2- CEI-345- 700T	operati on	917.0	196.96	197.66	DC	14.26
99344536	200767	26HOMER CT	230.0	PENEL EC	200795	26SHELOCT A	230.0	PENEL EC	1	Base Case	operati on	731.0	175.93	176.63	DC	11.58
99344673	200769	26HOMER CY	345.0	PENEL EC	999392	26HOMER CT	1.0	PENEL EC	N	PN-P1-3-PN- 230-004A	operati on	807.0	145.85	146.79	DC	16.94
99344677	200769	26HOMER CY	345.0	PENEL EC	999392	26HOMER CT	1.0	PENEL EC	N	Base Case	operati on	653.0	103.4	104.07	DC	9.72
99344708	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	PN-P1-3-PN- 230-003A	operati on	824.0	142.04	142.95	DC	16.85
99344712	200769	26HOMER CY	345.0	PENEL EC	999391	26HOMER CT	1.0	PENEL EC	S	Base Case	operati on	647.0	102.0	102.66	DC	9.5

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE CT LOADI NG %	POST PROJE CT LOADI NG %	AC DC	MW IMPA CT
99344549	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	PN-P1-2-PN-345-107T	operati on	917.0	188.06	188.78	DC	14.44
99344550	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	ATSI-P1-2-CEI-345-700T	operati on	917.0	188.06	188.78	DC	14.44
99344553	200795	26SHELOCT A	230.0	PENEL EC	200810	26KEYSTON E	230.0	PENEL EC	1	Base Case	operati on	731.0	163.98	164.7	DC	11.62
99344766	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	PN-P1-3-PN-500-001AT	operati on	635.0	135.59	136.21	DC	8.62
99344769	200810	26KEYSTON E	230.0	PENEL EC	999401	KEYSTONE	1.0	PJM	4	Base Case	operati on	494.0	116.09	116.62	DC	5.77
98767547	200908	26CHAPMA N+	230.0	PENEL EC	235220	01MOSHAN	230.0	AP	1	PL_P12_000193	operati on	621.0	138.12	142.51	DC	27.46
98767551	200908	26CHAPMA N+	230.0	PENEL EC	235220	01MOSHAN	230.0	AP	1	Base Case	operati on	520.0	136.76	140.16	DC	17.74
99344630	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	Base Case	operati on	546.0	149.14	155.29	DC	39.95
99344631	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	20090826CHAPMA N+ 23023522001MOSHAN 230 230 1	operati on	666.0	140.64	147.19	DC	46.49
99344632	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	AP-P1-2-WP-230-324T_FSA_A-B	operati on	666.0	140.64	147.19	DC	46.49
99344633	200924	26CANYON	230.0	PENEL EC	200706	26N.MESHP N	230.0	PENEL EC	1	20090826CHAPMA N+ 230919490AA2-000TAP 230 1	operati on	666.0	140.64	147.19	DC	46.49
99344665	200940	26SCOTCHH LLW	230.0	PENEL EC	200675	26E.TWAND A	230.0	PENEL EC	1	Base Case	operati on	491.0	110.19	113.91	DC	18.24
99344949	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	4	PL_P13_100329	operati on	1145.0	102.41	103.28	DC	21.83
99344950	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	4	PL_P13_100347	operati on	1145.0	102.41	103.28	DC	21.83
99344962	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	3	PL_P13_100348	operati on	1167.0	100.51	101.36	DC	21.84
99344963	208009	LACK	230.0	PPL	200074	LACKAW	500.0	PJM	3	PL_P13_100328	operati on	1167.0	100.51	101.36	DC	21.84
98767518	235219	01MILES B	230.0	AP	235970	01DALE	230.0	AP	1	AP-P1-2-WP-230-322T	operati on	554.0	157.44	158.0	DC	6.84
98767691	235220	01MOSHAN	230.0	AP	235236	01QUEHAN	230.0	AP	1	AP-P1-3-WP-230-326T	operati on	704.0	100.57	101.08	DC	7.93
98767684	235236	01QUEHAN	230.0	AP	235175	01ELKO	230.0	AP	1	AP-P1-3-WP-230-326T	operati on	688.0	102.63	103.15	DC	7.93
99344737	919200	AA1-144 TAP	230.0	PENEL EC	200940	26SCOTCHH LLW	230.0	PENEL EC	1	Base Case	operati on	520.0	106.59	110.09	DC	18.24
99344795	919490	AA2-000 TAP	230.0	PENEL EC	200908	26CHAPMA N+	230.0	PENEL EC	1	PL_P12_000193	operati on	666.0	128.78	132.88	DC	27.46
99344796	919490	AA2-000 TAP	230.0	PENEL EC	200908	26CHAPMA N+	230.0	PENEL EC	1	Base Case	operati on	546.0	130.25	133.48	DC	17.74
98767615	944320	AF1-100 TAP	230.0	AP	200710	26SHAWVL 1	230.0	PENEL EC	1	AP-P1-3-WP-230-005	operati on	600.0	120.67	122.4	DC	10.35
98767616	944320	AF1-100 TAP	230.0	AP	200710	26SHAWVL 1	230.0	PENEL EC	1	AP-P1-2-WP-230-005B	operati on	600.0	120.67	122.4	DC	10.35
99344716	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	PN-P1-3-PN-230-003A	operati on	824.0	142.04	142.95	DC	16.85
99344720	999391	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	S	Base Case	operati on	647.0	102.0	102.66	DC	9.5

ID	FROM BUS#	FROM BUS	kV	FROM BUS AREA	TO BUS#	TO BUS	kV	TO BUS AREA	CK T ID	CONT NAME	Type	Rating MVA	PRE PROJE CT LOADI NG %	POST PROJE CT LOADI NG %	AC DC	MW IMPA CT
99344683	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	PN-P1-3-PN-230-004A	operation	807.0	145.84	146.78	DC	16.94
99344687	999392	26HOMER CT	1.0	PENEL EC	200767	26HOMER CT	230.0	PENEL EC	N	Base Case	operation	653.0	103.38	104.05	DC	9.72
99344774	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	PN-P1-3-PN-500-001AT	operation	634.0	135.08	135.7	DC	8.62
99344779	999401	KEYSTONE	1.0	PJM	200011	KEYSTONE	500.0	PJM	4	Base Case	operation	493.0	115.37	115.9	DC	5.77

13.5 Flow Gate Details - Secondary POI

The following indices contain additional information about each facility presented in the body of the report. For each index, a description of the flowgate and its contingency was included for convenience. The intent of the indices is to provide more details on which projects/generators have contributions to the flowgate in question. All New Service Queue Requests, through the end of the Queue under study, that are contributors to a flowgate will be listed in the indices. Please note that there may be contributors that are subsequently queued after the queue under study that are not listed in the indices. Although this information is not used "as is" for cost allocation purposes, it can be used to gage the impact of other projects/generators. It should be noted the project/generator MW contributions presented in the body of the report are Full MW Impact contributions which are also noted in the indices column named "Full MW Impact", whereas the loading percentages reported in the body of the report, take into consideration the PJM Generator Deliverability Test rules such as commercial probability of each project as well as the ramping impact of "Adder" contributions. The MW Impact found and used in the analysis is shown in the indices column named "Gendeliv MW Impact".

13.5.1 Index 1

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99343911	200706	26N.MESHPN	PENELEC	200708	26OXBOW	PENELEC	1	AP-P2-2-WP-230-005T	bus	984.0	119.04	123.81	DC	46.72

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	11.2766	50/50	11.2766
200851	26MEHOOP3	5.7382	50/50	5.7382
200894	26K02	17.1541	Adder	20.18
200898	26AA1-106	6.4806	Adder	7.62
200917	26MTNTP_P28	2.9177	50/50	2.9177
200949	26X1-109	61.1623	50/50	61.1623
203283	26MANOR_T86	0.1014	50/50	0.1014
203347	26NME_Y1-047	1.9354	50/50	1.9354
203909	26Z1-038	8.6625	50/50	8.6625
203910	26Z1-091	9.4063	50/50	9.4063
203999	P-047 E	24.5379	Adder	28.87
235003	AC1-025 E	0.2027	Adder	0.24
236828	01GRAYMONT	0.5509	Adder	0.65
294573	P-028 E	67.6596	50/50	67.6596
916202	Z1-069 E	12.5370	Adder	14.75
918602	AA1-077 E	-8.5025	Adder	-10.0
918682	AA1-082 E	26.6512	50/50	26.6512
919201	AA1-144 OP	74.5432	50/50	74.5432
919491	AA2-000	100.6189	Adder	118.38
920341	AA2-132 (Suspended)	7.2516	Adder	8.53
920351	AA2-133	1.5271	50/50	1.5271
922932	AB1-082 OP (Suspended)	3.5046	Adder	4.12
923443	AB1-160 E	3.5820	Adder	4.21
930511	AB1-092	3.6944	Adder	4.35
934821	AD1-110	0.1459	50/50	0.1459
936421	AD2-055	7.6062	Adder	8.95
938332	AE1-051 BAT	1.2662	Merchant Transmission	1.2662
939171	AE1-147 C	1.6579	Adder	1.95
939172	AE1-147 E	1.1053	Adder	1.3
940201	AE2-001 C	1.6545	Adder	1.95
940202	AE2-001 E	1.1030	Adder	1.3
940681	AE2-055 C (Suspended)	1.6032	Adder	1.89
940682	AE2-055 E (Suspended)	1.0688	Adder	1.26
940861	AE2-074 C	2.6610	Adder	3.13
940862	AE2-074 E	3.5029	Adder	4.12
941191	AE2-113 C	8.4141	Adder	9.9
941192	AE2-113 E	9.0593	Adder	10.66
941261	AE2-120 C	1.6531	Adder	1.94
941262	AE2-120 E	1.1021	Adder	1.3
941271	AE2-121 C	0.8835	Adder	1.04

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941272	AE2-121 E	0.5899	Adder	0.69
941321	AE2-126 C	1.4861	Adder	1.75
941322	AE2-126 E	0.9908	Adder	1.17
941421	AE2-139 C	21.8690	Adder	25.73
941422	AE2-139 E	14.5793	Adder	17.15
942351	AE2-248 C	1.3016	Adder	1.53
942352	AE2-248 E	0.8677	Adder	1.02
942491	AE2-262 C	7.2633	Adder	8.55
942492	AE2-262 E	4.8809	Adder	5.74
942501	AE2-263 C	6.8275	Adder	8.03
942502	AE2-263 E	4.5584	Adder	5.36
943751	AF1-043	22.8185	Adder	26.85
944001	AF1-068 C O1	1.7269	Adder	2.03
944002	AF1-068 E O1	0.9714	Adder	1.14
944311	AF1-099 C	11.0256	Adder	12.97
944312	AF1-099 E	7.3504	Adder	8.65
944321	AF1-100 C	21.1268	Adder	24.86
944322	AF1-100 E	14.0845	Adder	16.57
944411	AF1-106 O1	6.5739	Adder	7.73
944471	AF1-112 C	1.7404	Adder	2.05
944472	AF1-112 E	0.9790	Adder	1.15
944671	AF1-132 C O1	1.6151	Adder	1.9
944672	AF1-132 E O1	1.0767	Adder	1.27
944771	AF1-142 C	17.6410	Adder	20.75
944772	AF1-142 E	11.7607	Adder	13.84
944841	AF1-149 C	1.6530	Adder	1.94
944842	AF1-149 E	1.1020	Adder	1.3
944881	AF1-153 C O1	1.4524	Adder	1.71
944882	AF1-153 E O1	0.9683	Adder	1.14
944901	AF1-155 C	1.4455	Adder	1.7
944902	AF1-155 E	0.9637	Adder	1.13
945161	AF1-181	0.1102	Adder	0.13
945171	AF1-182	0.5491	Adder	0.65
945181	AF1-183	0.1292	Adder	0.15
945331	AF1-198	0.7271	Adder	0.86
945491	AF1-214 C	1.6532	Adder	1.94
945492	AF1-214 E	1.1021	Adder	1.3
945551	AF1-220 C	11.5236	Adder	13.56
945552	AF1-220 E	7.6866	Adder	9.04
946111	AF1-276 C	8.5009	Adder	10.0
946112	AF1-276 E	4.1870	Adder	4.93
946121	AF1-277 C	8.5009	Adder	10.0
946122	AF1-277 E	4.1870	Adder	4.93
946131	AF1-278 C	6.7754	Adder	7.97
946132	AF1-278 E	3.3699	Adder	3.96
946211	AF1-286 C O1	2.6624	Adder	3.13
946212	AF1-286 E O1	1.8078	Adder	2.13
946421	AF1-306 C	6.3561	Adder	7.48
946422	AF1-306 E	25.4246	Adder	29.91
957451	AF2-039 C	0.5142	Adder	1.14
957452	AF2-039 E	0.3428	Adder	0.76
957581	AF2-052 C	2.7165	Adder	6.03

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957582	AF2-052 E	1.3215	Adder	2.93
957681	AF2-062 C	8.1917	Adder	18.18
957682	AF2-062 E	5.4611	Adder	12.12
957941	AF2-088 C	0.2476	Adder	0.55
957942	AF2-088 E	0.1651	Adder	0.37
959061	AF2-197 C O2	18.6883	50/50	18.6883
959062	AF2-197 E O2	28.0325	50/50	28.0325
959471	AF2-238 C	2.0124	Adder	4.47
959472	AF2-238 E	1.3416	Adder	2.98
959481	AF2-239 C	5.0215	50/50	5.0215
959482	AF2-239 E	4.0263	50/50	4.0263
959491	AF2-240 C	1.8815	Adder	4.18
959492	AF2-240 E	1.6027	Adder	3.56
959501	AF2-241 C	1.9686	Adder	4.37
959502	AF2-241 E	1.5156	Adder	3.36
959741	AF2-265 C	1.4422	Adder	3.2
959742	AF2-265 E	1.0733	Adder	2.38
959913	AF2-282 BAT	0.1007	Merchant Transmission	0.1007
959923	AF2-283 BAT	0.1007	Merchant Transmission	0.1007
960022	AF2-293 E	0.0854	Adder	0.19
960031	AF2-294 C	2.3176	Adder	5.14
960032	AF2-294 E	1.5451	Adder	3.43
960041	AF2-295 C	0.7661	Adder	1.7
960042	AF2-295 E	0.5108	Adder	1.13
960271	AF2-318 C	5.4287	50/50	5.4287
960272	AF2-318 E	3.6191	50/50	3.6191
961141	AF2-405	1.7421	Adder	3.87
961151	AF2-406	13.0656	Adder	29.0
961201	AF2-411 O2	43.5034	Adder	96.57
961211	AF2-412 O2	17.4155	Adder	38.66
961451	AF2-436	0.6673	50/50	0.6673
WEC	WEC	0.4804	Confirmed LTF	0.4804
LGEE	LGEE	0.8369	Confirmed LTF	0.8369
CPL	CPL	0.5365	Confirmed LTF	0.5365
CBM-W2	CBM-W2	11.2858	Confirmed LTF	11.2858
CBM-W1	CBM-W1	19.9785	Confirmed LTF	19.9785
TVA	TVA	1.7934	Confirmed LTF	1.7934
O-066	O-066	35.7840	Confirmed LTF	35.7840
CBM-S2	CBM-S2	5.5083	Confirmed LTF	5.5083
CBM-S1	CBM-S1	11.2038	Confirmed LTF	11.2038
G-007	G-007	5.1574	Confirmed LTF	5.1574
MEC	MEC	2.3342	Confirmed LTF	2.3342

13.5.2 Index 2

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
101145523	200674	26TOWANDA	PENELEC	200677	26NO MESHO	PENELEC	1	PN-P1-2-PN-230-013A	single	202.0	161.61	165.58	DC	8.02

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200649	26PENNTech	0.3714	80/20	0.3714
200665	26SHAWVL 3	1.5072	80/20	1.5072
200666	26SHAWVL 4	1.4899	80/20	1.4899
200887	26ARMNA MT	0.5912	80/20	0.5912
200898	26AA1-106	3.3036	80/20	3.3036
200949	26X1-109	26.2332	80/20	26.2332
203261	26BLOSSBCT	0.4864	80/20	0.4864
203283	26MANOR_T86	0.0519	80/20	0.0519
203349	26Z1-069 C	0.2495	80/20	0.2495
203350	26MILZ1-092	0.6000	80/20	0.6000
203351	26GROZ1-110	0.5698	80/20	0.5698
203352	26CANZ2-011	0.5698	80/20	0.5698
919201	AA1-144 OP	31.9154	80/20	31.9154
919491	AA2-000	44.5915	80/20	44.5915
920351	AA2-133	0.2275	80/20	0.2275
922932	AB1-082 OP (Suspended)	1.6238	80/20	1.6238
923442	AB1-160 C	0.0713	80/20	0.0713
930511	AB1-092	1.6373	80/20	1.6373
934801	AD1-108	0.0430	80/20	0.0430
934811	AD1-109	0.0315	80/20	0.0315
935061	AD1-142	0.0332	80/20	0.0332
936421	AD2-055	3.3708	80/20	3.3708
940861	AE2-074 C	1.2330	80/20	1.2330
941191	AE2-113 C	3.4749	80/20	3.4749
941421	AE2-139 C	10.9083	80/20	10.9083
942491	AE2-262 C	2.5070	80/20	2.5070
942501	AE2-263 C	2.3566	80/20	2.3566
943751	AF1-043	10.1125	80/20	10.1125
944311	AF1-099 C	3.8056	80/20	3.8056
944321	AF1-100 C	7.8540	80/20	7.8540
944411	AF1-106 O1	3.4958	80/20	3.4958
944771	AF1-142 C	6.0890	80/20	6.0890
945161	AF1-181	0.0406	80/20	0.0406
945171	AF1-182	0.2020	80/20	0.2020
945331	AF1-198	0.3711	80/20	0.3711
946111	AF1-276 C	3.5322	80/20	3.5322
946121	AF1-277 C	3.5322	80/20	3.5322
946131	AF1-278 C	2.8152	80/20	2.8152
946211	AF1-286 C O1	1.4158	80/20	1.4158
957581	AF2-052 C	2.1708	80/20	2.1708

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957681	AF2-062 C	6.4416	80/20	6.4416
959061	AF2-197 C O2	8.0156	80/20	8.0156
959471	AF2-238 C	2.1307	80/20	2.1307
959481	AF2-239 C	2.5693	80/20	2.5693
959491	AF2-240 C	1.8877	80/20	1.8877
959501	AF2-241 C	1.9751	80/20	1.9751
959741	AF2-265 C	1.5270	80/20	1.5270
960271	AF2-318 C	2.7776	80/20	2.7776
961141	AF2-405	1.7479	80/20	1.7479
961151	AF2-406	13.1092	80/20	13.1092
961201	AF2-411 O2	42.1350	80/20	42.1350
961211	AF2-412 O2	14.7641	80/20	14.7641
961451	AF2-436	0.0994	80/20	0.0994
WEC	WEC	0.1852	Confirmed LTF	0.1852
LGEE	LGEE	0.3240	Confirmed LTF	0.3240
CPL	CPL	0.2209	Confirmed LTF	0.2209
CBM-W2	CBM-W2	4.3898	Confirmed LTF	4.3898
CBM-W1	CBM-W1	7.6686	Confirmed LTF	7.6686
TVA	TVA	0.7014	Confirmed LTF	0.7014
CBM-S2	CBM-S2	2.2195	Confirmed LTF	2.2195
CBM-S1	CBM-S1	4.3793	Confirmed LTF	4.3793
MEC	MEC	0.9026	Confirmed LTF	0.9026

13.5.3 Index 3

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADIN G %	POST PROJECT LOADIN G %	AC D C	MW IMPAC T
155517461	200675	26E.TWAND A	PENELE C	130763	HILSD230	NYIS O	1	PL_P42_101231	breaker	531.0	123.53	131.73	DC	43.62

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	6.3762	50/50	6.3762
200851	26MEHOOP3	3.2446	50/50	3.2446
200894	26K02	16.9282	50/50	16.9282
200898	26AA1-106	4.6496	Adder	5.47
200917	26MTNTP_P28	1.6498	50/50	1.6498
200949	26X1-109	57.0980	50/50	57.0980
203283	26MANOR_T86	0.0751	50/50	0.0751
203347	26NME_Y1-047	1.0944	50/50	1.0944
203907	26Y2-042	6.0386	50/50	6.0386
203909	26Z1-038	6.4305	50/50	6.4305
203910	26Z1-091	2.6240	Adder	3.09
203999	P-047 E	7.6670	Adder	9.02
294573	P-028 E	38.2572	50/50	38.2572
917631	Z2-104	0.0911	50/50	0.0911
918682	AA1-082 E	24.8803	50/50	24.8803
919201	AA1-144 OP	69.2261	50/50	69.2261
919491	AA2-000	69.2530	Adder	81.47
920341	AA2-132 (Suspended)	1.2884	Adder	1.52
920351	AA2-133	1.1316	50/50	1.1316
930511	AB1-092	2.5428	Adder	2.99
934821	AD1-110	0.0825	50/50	0.0825
936421	AD2-055	5.2351	Adder	6.16
941421	AE2-139 C	23.2149	50/50	23.2149
941422	AE2-139 E	15.4766	50/50	15.4766
942491	AE2-262 C	2.9801	Adder	3.51
942492	AE2-262 E	2.0026	Adder	2.36
942501	AE2-263 C	2.8013	Adder	3.3
942502	AE2-263 E	1.8703	Adder	2.2
943751	AF1-043	15.7053	Adder	18.48
944311	AF1-099 C	4.5238	Adder	5.32
944312	AF1-099 E	3.0159	Adder	3.55
944321	AF1-100 C	8.8421	Adder	10.4
944322	AF1-100 E	5.8947	Adder	6.93
944771	AF1-142 C	7.2381	Adder	8.52
944772	AF1-142 E	4.8254	Adder	5.68
945331	AF1-198	0.2674	Adder	0.31
959061	AF2-197 C O2	17.4465	50/50	17.4465
959062	AF2-197 E O2	26.1697	50/50	26.1697
959471	AF2-238 C	0.8998	Adder	2.0
959472	AF2-238 E	0.5999	Adder	1.33
959481	AF2-239 C	3.7161	50/50	3.7161
959482	AF2-239 E	2.9795	50/50	2.9795

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959741	AF2-265 C	0.6449	Adder	1.43
959742	AF2-265 E	0.4799	Adder	1.07
960031	AF2-294 C	0.4118	Adder	0.91
960032	AF2-294 E	0.2745	Adder	0.61
960271	AF2-318 C	4.0174	50/50	4.0174
960272	AF2-318 E	2.6782	50/50	2.6782
961212	AF2-412 BAT	6.1342	Merchant Transmission	6.1342
961451	AF2-436	0.4945	50/50	0.4945
961461	AF2-437	0.4950	50/50	0.4950
NEWTON	NEWTON	0.2170	Confirmed LTF	0.2170
FARMERCITY	FARMERCITY	0.0113	Confirmed LTF	0.0113
CALDERWOOD	CALDERWOOD	0.0979	Confirmed LTF	0.0979
NY	NY	1.8028	Confirmed LTF	1.8028
PRAIRIE	PRAIRIE	0.5192	Confirmed LTF	0.5192
O-066	O-066	2.1706	Confirmed LTF	2.1706
CHEOAH	CHEOAH	0.0986	Confirmed LTF	0.0986
EDWARDS	EDWARDS	0.0711	Confirmed LTF	0.0711
TILTON	TILTON	0.1279	Confirmed LTF	0.1279
G-007	G-007	0.3141	Confirmed LTF	0.3141
MADISON	MADISON	0.0020	Confirmed LTF	0.0020
GIBSON	GIBSON	0.1103	Confirmed LTF	0.1103
BLUEG	BLUEG	0.3507	Confirmed LTF	0.3507
TRIMBLE	TRIMBLE	0.1124	Confirmed LTF	0.1124
CATAWBA	CATAWBA	0.0676	Confirmed LTF	0.0676

13.5.4 Index 4

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344591	200675	26E.TWANDA	PENELEC	200924	26CANYON	PENELEC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	615.0	136.69	139.47	DC	18.6

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	2.7835	80/20	2.7835
200643	26SENECA#2	2.6288	80/20	2.6288
200644	26SENECA#3	0.2588	80/20	0.2588
200887	26ARMNA MT	0.9749	80/20	0.9749
200898	26AA1-106	7.9120	80/20	7.9120
200949	26X1-109	60.8654	80/20	60.8654
201201	26WRREN CT	0.6284	80/20	0.6284
201477	26Y2-055	1.8543	80/20	1.8543
203261	26BLOSSBCT	1.0064	80/20	1.0064
203283	26MANOR_T86	0.0744	80/20	0.0744
203349	26Z1-069 C	0.4421	80/20	0.4421
203350	26MILZ1-092	1.0277	80/20	1.0277
203351	26GROZ1-110	1.3648	80/20	1.3648
203352	26CANZ2-011	1.3648	80/20	1.3648
919201	AA1-144 OP	74.9653	80/20	74.9653
919491	AA2-000	197.7334	80/20	197.7334
920341	AA2-132 (Suspended)	1.8688	80/20	1.8688
920351	AA2-133	0.5660	80/20	0.5660
922932	AB1-082 OP (Suspended)	2.8190	80/20	2.8190
923442	AB1-160 C	0.1263	80/20	0.1263
930511	AB1-092	7.2602	80/20	7.2602
934801	AD1-108	0.1029	80/20	0.1029
934811	AD1-109	0.0754	80/20	0.0754
935061	AD1-142	0.0568	80/20	0.0568
936421	AD2-055	14.9474	80/20	14.9474
940861	AE2-074 C	2.1405	80/20	2.1405
941191	AE2-113 C	5.1770	80/20	5.1770
941421	AE2-139 C	27.3328	80/20	27.3328
943751	AF1-043	44.8423	80/20	44.8423
944381	AF1-103 O1	1.2782	80/20	1.2782
944411	AF1-106 O1	5.9878	80/20	5.9878
945121	AF1-177	0.3196	80/20	0.3196
945331	AF1-198	0.7677	80/20	0.7677
946111	AF1-276 C	5.9315	80/20	5.9315
946121	AF1-277 C	5.9315	80/20	5.9315
946131	AF1-278 C	4.7275	80/20	4.7275
946211	AF1-286 C O1	2.4251	80/20	2.4251
957581	AF2-052 C	3.5405	80/20	3.5405
957681	AF2-062 C	10.9812	80/20	10.9812
959061	AF2-197 C O2	18.5976	80/20	18.5976

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959471	AF2-238 C	3.7598	80/20	3.7598
959481	AF2-239 C	3.6826	80/20	3.6826
959491	AF2-240 C	3.2334	80/20	3.2334
959501	AF2-241 C	3.3831	80/20	3.3831
959741	AF2-265 C	2.6946	80/20	2.6946
960031	AF2-294 C	1.1269	80/20	1.1269
960271	AF2-318 C	3.9812	80/20	3.9812
961141	AF2-405	2.9939	80/20	2.9939
961151	AF2-406	22.4542	80/20	22.4542
961201	AF2-411 O2	75.4200	80/20	75.4200
961211	AF2-412 O2	29.9923	80/20	29.9923
961451	AF2-436	0.2473	80/20	0.2473
WEC	WEC	0.2800	Confirmed LTF	0.2800
LGEE	LGEE	0.4872	Confirmed LTF	0.4872
CPL	CPL	0.3076	Confirmed LTF	0.3076
CBM-W2	CBM-W2	6.5602	Confirmed LTF	6.5602
CBM-W1	CBM-W1	11.6468	Confirmed LTF	11.6468
TVA	TVA	1.0416	Confirmed LTF	1.0416
CBM-S2	CBM-S2	3.1732	Confirmed LTF	3.1732
CBM-S1	CBM-S1	6.5093	Confirmed LTF	6.5093
MEC	MEC	1.3602	Confirmed LTF	1.3602

13.5.5 Index 5

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344525	200676	26E.SAYRE	PENELEC	130836	N.WAV115	NYISO	1	PN-P1-2-PN-230-101T	single	128.0	108.37	111.79	DC	4.37

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200851	26MEHOOP3	0.7270	80/20	0.7270
200898	26AA1-106	1.2716	80/20	1.2716
200917	26MTNTP_P28	0.3696	80/20	0.3696
200949	26X1-109	14.2910	80/20	14.2910
203283	26MANOR_T86	0.0340	80/20	0.0340
203347	26NME_Y1-047	0.2452	80/20	0.2452
203350	26MILZ1-092	1.9559	80/20	1.9559
203351	26GROZ1-110	0.2193	80/20	0.2193
203352	26CANZ2-011	0.2193	80/20	0.2193
203907	26Y2-042	1.1253	80/20	1.1253
203909	26Z1-038	1.6097	80/20	1.6097
917631	Z2-104	0.0170	80/20	0.0170
919201	AA1-144 OP	17.2861	80/20	17.2861
920351	AA2-133	0.4137	80/20	0.4137
934801	AD1-108	0.0165	80/20	0.0165
934811	AD1-109	0.0121	80/20	0.0121
934821	AD1-110	0.0185	80/20	0.0185
935061	AD1-142	0.1081	80/20	0.1081
941421	AE2-139 C	5.7219	80/20	5.7219
944411	AF1-106 O1	11.3960	80/20	11.3960
946211	AF1-286 C O1	4.6154	80/20	4.6154
959061	AF2-197 C O2	4.3667	80/20	4.3667
959481	AF2-239 C	1.6834	80/20	1.6834
959491	AF2-240 C	6.1538	80/20	6.1538
959501	AF2-241 C	6.4387	80/20	6.4387
960271	AF2-318 C	1.8199	80/20	1.8199
961141	AF2-405	5.6980	80/20	5.6980
961151	AF2-406	42.7350	80/20	42.7350
961451	AF2-436	0.1808	80/20	0.1808
961461	AF2-437	0.0922	80/20	0.0922
NEWTON	NEWTON	0.4459	Confirmed LTF	0.4459
FARMERCITY	FARMERCITY	0.0230	Confirmed LTF	0.0230
G-007A	G-007A	2.1122	Confirmed LTF	2.1122
VFT	VFT	5.9856	Confirmed LTF	5.9856
CALDERWOOD	CALDERWOOD	0.1784	Confirmed LTF	0.1784
NY	NY	1.8620	Confirmed LTF	1.8620
PRAIRIE	PRAIRIE	1.0513	Confirmed LTF	1.0513
CHEOAH	CHEOAH	0.1787	Confirmed LTF	0.1787
EDWARDS	EDWARDS	0.1488	Confirmed LTF	0.1488
TILTON	TILTON	0.2671	Confirmed LTF	0.2671
MADISON	MADISON	0.0222	Confirmed LTF	0.0222

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
GIBSON	GIBSON	0.2277	Confirmed LTF	0.2277
BLUEG	BLUEG	0.7222	Confirmed LTF	0.7222
TRIMBLE	TRIMBLE	0.2315	Confirmed LTF	0.2315
CATAWBA	CATAWBA	0.1092	Confirmed LTF	0.1092

13.5.6 Index 6

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99343926	200708	26OXBOW	PENELEC	208009	LACK	PPL	1	AP-P2-2-WP-230-005T	bus	984.0	120.64	124.41	DC	47.24

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	11.5222	50/50	11.5222
200851	26MEHOOP3	5.8631	50/50	5.8631
200894	26K02	17.3483	Adder	20.41
200898	26AA1-106	6.5596	Adder	7.72
200917	26MTNTP_P28	2.9813	50/50	2.9813
200949	26X1-109	61.8419	50/50	61.8419
203347	26NME_Y1-047	1.9776	50/50	1.9776
203907	26Y2-042	12.3229	50/50	12.3229
203909	26Z1-038	11.5197	50/50	11.5197
203910	26Z1-091	9.5916	50/50	9.5916
203999	P-047 E	24.9012	Adder	29.3
235003	AC1-025 E	0.2051	Adder	0.24
236828	01GRAYMONT	0.5573	Adder	0.66
294573	P-028 E	69.1332	50/50	69.1332
916202	Z1-069 E	12.7129	Adder	14.96
917631	Z2-104	0.1858	50/50	0.1858
918682	AA1-082 E	26.9474	50/50	26.9474
919201	AA1-144 OP	64.0669	Adder	75.37
919491	AA2-000	101.7720	Adder	119.73
920341	AA2-132 (Suspended)	7.3849	Adder	8.69
920351	AA2-133	1.7724	50/50	1.7724
922932	AB1-082 OP (Suspended)	3.5528	Adder	4.18
923443	AB1-160 E	3.6323	Adder	4.27
930511	AB1-092	3.7368	Adder	4.4
934821	AD1-110	0.1491	50/50	0.1491
936421	AD2-055	7.6933	Adder	9.05
939171	AE1-147 C	1.6772	Adder	1.97
939172	AE1-147 E	1.1181	Adder	1.32
940201	AE2-001 C	1.6738	Adder	1.97
940202	AE2-001 E	1.1159	Adder	1.31
940681	AE2-055 C (Suspended)	1.6219	Adder	1.91
940682	AE2-055 E (Suspended)	1.0813	Adder	1.27
940861	AE2-074 C	2.6976	Adder	3.17
940862	AE2-074 E	3.5510	Adder	4.18
941191	AE2-113 C	8.5226	Adder	10.03
941192	AE2-113 E	9.1761	Adder	10.8
941261	AE2-120 C	1.6724	Adder	1.97
941262	AE2-120 E	1.1149	Adder	1.31
941271	AE2-121 C	0.8938	Adder	1.05
941272	AE2-121 E	0.5968	Adder	0.7

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941321	AE2-126 C	1.5042	Adder	1.77
941322	AE2-126 E	1.0028	Adder	1.18
941421	AE2-139 C	22.1140	Adder	26.02
941422	AE2-139 E	14.7426	Adder	17.34
942351	AE2-248 C	1.3168	Adder	1.55
942352	AE2-248 E	0.8779	Adder	1.03
942491	AE2-262 C	7.3483	Adder	8.65
942492	AE2-262 E	4.9380	Adder	5.81
942501	AE2-263 C	6.9074	Adder	8.13
942502	AE2-263 E	4.6118	Adder	5.43
943751	AF1-043	23.0800	Adder	27.15
944001	AF1-068 C O1	1.7469	Adder	2.06
944002	AF1-068 E O1	0.9826	Adder	1.16
944311	AF1-099 C	11.1546	Adder	13.12
944312	AF1-099 E	7.4364	Adder	8.75
944321	AF1-100 C	21.3766	Adder	25.15
944322	AF1-100 E	14.2511	Adder	16.77
944411	AF1-106 O1	6.6708	Adder	7.85
944471	AF1-112 C	1.7605	Adder	2.07
944472	AF1-112 E	0.9903	Adder	1.17
944671	AF1-132 C O1	1.6338	Adder	1.92
944672	AF1-132 E O1	1.0892	Adder	1.28
944771	AF1-142 C	17.8474	Adder	21.0
944772	AF1-142 E	11.8983	Adder	14.0
944841	AF1-149 C	1.6722	Adder	1.97
944842	AF1-149 E	1.1148	Adder	1.31
944881	AF1-153 C O1	1.4700	Adder	1.73
944882	AF1-153 E O1	0.9800	Adder	1.15
944901	AF1-155 C	1.4630	Adder	1.72
944902	AF1-155 E	0.9753	Adder	1.15
945161	AF1-181	0.1115	Adder	0.13
945171	AF1-182	0.5556	Adder	0.65
945181	AF1-183	0.1307	Adder	0.15
945331	AF1-198	0.7368	Adder	0.87
945491	AF1-214 C	1.6724	Adder	1.97
945492	AF1-214 E	1.1149	Adder	1.31
945551	AF1-220 C	11.6659	Adder	13.72
945552	AF1-220 E	7.7816	Adder	9.15
946111	AF1-276 C	8.6131	Adder	10.13
946112	AF1-276 E	4.2423	Adder	4.99
946121	AF1-277 C	8.6131	Adder	10.13
946122	AF1-277 E	4.2423	Adder	4.99
946131	AF1-278 C	6.8648	Adder	8.08
946132	AF1-278 E	3.4144	Adder	4.02
946211	AF1-286 C O1	2.7017	Adder	3.18
946212	AF1-286 E O1	1.8345	Adder	2.16
946421	AF1-306 C	6.4328	Adder	7.57
946422	AF1-306 E	25.7313	Adder	30.27
957451	AF2-039 C	0.5204	Adder	1.16
957452	AF2-039 E	0.3469	Adder	0.77
957581	AF2-052 C	2.7523	Adder	6.11
957582	AF2-052 E	1.3390	Adder	2.97

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957681	AF2-062 C	8.3004	Adder	18.42
957682	AF2-062 E	5.5336	Adder	12.28
957941	AF2-088 C	0.2506	Adder	0.56
957942	AF2-088 E	0.1670	Adder	0.37
959061	AF2-197 C O2	8.5126	Adder	18.9
959062	AF2-197 E O2	28.3440	50/50	28.3440
959471	AF2-238 C	2.0414	Adder	4.53
959472	AF2-238 E	1.3609	Adder	3.02
959481	AF2-239 C	2.3363	Adder	5.19
959482	AF2-239 E	1.8733	Adder	4.16
959491	AF2-240 C	1.9092	Adder	4.24
959492	AF2-240 E	1.6263	Adder	3.61
959501	AF2-241 C	1.9976	Adder	4.43
959502	AF2-241 E	1.5380	Adder	3.41
959741	AF2-265 C	1.4630	Adder	3.25
959742	AF2-265 E	1.0887	Adder	2.42
960022	AF2-293 E	0.0864	Adder	0.19
960031	AF2-294 C	2.3602	Adder	5.24
960032	AF2-294 E	1.5735	Adder	3.49
960041	AF2-295 C	0.7754	Adder	1.72
960042	AF2-295 E	0.5169	Adder	1.15
960271	AF2-318 C	2.5257	Adder	5.61
960272	AF2-318 E	1.6838	Adder	3.74
961141	AF2-405	1.7678	Adder	3.92
961151	AF2-406	13.2582	Adder	29.43
961201	AF2-411 O2	44.1265	Adder	97.95
961211	AF2-412 O2	17.6550	Adder	39.19
961451	AF2-436	0.7745	50/50	0.7745
961461	AF2-437	1.0101	50/50	1.0101
WEC	WEC	0.4864	Confirmed LTF	0.4864
LGEE	LGEE	0.8472	Confirmed LTF	0.8472
CPL	CPL	0.5431	Confirmed LTF	0.5431
CBM-W2	CBM-W2	11.4250	Confirmed LTF	11.4250
CBM-W1	CBM-W1	20.2287	Confirmed LTF	20.2287
TVA	TVA	1.8158	Confirmed LTF	1.8158
O-066	O-066	36.2611	Confirmed LTF	36.2611
CBM-S2	CBM-S2	5.5777	Confirmed LTF	5.5777
CBM-S1	CBM-S1	11.3486	Confirmed LTF	11.3486
G-007	G-007	5.2260	Confirmed LTF	5.2260
MEC	MEC	2.3644	Confirmed LTF	2.3644

13.5.7 Index 7

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344367	200767	26HOMER CT	PENELEC	200793	26SEWARD 2	PENELEC	1	PN-P2-3-PN-230-9G-A	breaker	813.0	106.65	107.14	DC	8.99

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200809	26SITHE	2.1503	50/50	2.1503
200823	26MHP_X3-003	1.1959	Adder	1.41
200832	26HNSMLK 5	1.2482	50/50	1.2482
200837	26HOMER C1	37.0333	50/50	37.0333
200838	26HOMER C2	30.2493	50/50	30.2493
200839	26HOMER C3	32.0228	50/50	32.0228
200894	26K02	3.6447	Adder	4.29
200898	26AA1-106	1.6144	Adder	1.9
201477	26Y2-055	2.5540	Adder	3.0
203349	26Z1-069 C	0.3309	50/50	0.3309
203909	26Z1-038	1.1785	Adder	1.39
203910	26Z1-091	1.6199	Adder	1.91
203999	P-047 E	8.7625	Adder	10.31
294573	P-028 E	7.1757	Adder	8.44
915951	Y3-092 FTIR	75.4500	Merchant Transmission	75.4500
916202	Z1-069 E	8.1773	50/50	8.1773
917672	Z2-108 E	-1.3354	Adder	-1.57
917673	Z2-108 BAT	1.5710	Merchant Transmission	1.5710
918682	AA1-082 E	4.3601	Adder	5.13
919201	AA1-144 OP	12.2631	Adder	14.43
919491	AA2-000	24.3962	Adder	28.7
920341	AA2-132 (Suspended)	1.8273	Adder	2.15
922932	AB1-082 OP (Suspended)	2.9173	50/50	2.9173
923442	AB1-160 C	0.0945	50/50	0.0945
923443	AB1-160 E	2.3364	50/50	2.3364
930511	AB1-092	0.8958	Adder	1.05
936421	AD2-055	1.8442	Adder	2.17
938352	AE1-053 BAT	0.8728	Merchant Transmission	0.8728
938882	AE1-116 BAT	0.9130	Merchant Transmission	0.9130
938951	AE1-123	0.9654	Adder	1.14
939291	AE1-160 C	0.8635	Adder	1.02
939292	AE1-160 E	0.4963	Adder	0.58
940861	AE2-074 C	2.2151	50/50	2.2151
940862	AE2-074 E	2.9159	50/50	2.9159
941191	AE2-113 C	6.2564	Adder	7.36
941192	AE2-113 E	6.7362	Adder	7.92
941321	AE2-126 C	0.5663	Adder	0.67
941322	AE2-126 E	0.3775	Adder	0.44
941421	AE2-139 C	4.3577	Adder	5.13
941422	AE2-139 E	2.9051	Adder	3.42

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942811	AE2-299 C	2.4488	Adder	2.88
942812	AE2-299 E	9.7953	Adder	11.52
942961	AE2-316 C	2.9564	Adder	3.48
942962	AE2-316 E	4.2159	Adder	4.96
943151	AE2-344 C	5.1608	Adder	6.07
943152	AE2-344 E	3.4405	Adder	4.05
943351	AF1-006 C	0.8993	Adder	1.06
943352	AF1-006 E	0.5059	Adder	0.6
943751	AF1-043	5.5326	Adder	6.51
944261	AF1-094 C	0.8490	Adder	1.0
944262	AF1-094 E	0.5660	Adder	0.67
944281	AF1-096 C	0.8159	Adder	0.96
944282	AF1-096 E	0.5439	Adder	0.64
944301	AF1-098 C	3.6410	Adder	4.28
944302	AF1-098 E	2.4273	Adder	2.86
944381	AF1-103 O1	1.7609	Adder	2.07
944391	AF1-104 O1	1.3374	Adder	1.57
944411	AF1-106 O1	1.9885	Adder	2.34
944881	AF1-153 C O1	0.6980	Adder	0.82
944882	AF1-153 E O1	0.4653	Adder	0.55
944901	AF1-155 C	0.7001	Adder	0.82
944902	AF1-155 E	0.4668	Adder	0.55
945021	AF1-167 C	0.5239	Adder	0.62
945022	AF1-167 E	0.3499	Adder	0.41
945051	AF1-170 C	3.2683	Adder	3.85
945052	AF1-170 E	2.1789	Adder	2.56
945121	AF1-177	0.4402	Adder	0.52
945331	AF1-198	0.2611	Adder	0.31
945451	AF1-210 C	0.5905	Adder	0.69
945452	AF1-210 E	0.3937	Adder	0.46
945551	AF1-220 C	5.7533	Adder	6.77
945552	AF1-220 E	3.8376	Adder	4.51
945673	AF1-232 BAT	2.0274	Merchant Transmission	2.0274
946111	AF1-276 C	9.9193	50/50	9.9193
946112	AF1-276 E	4.8856	50/50	4.8856
946121	AF1-277 C	9.9193	50/50	9.9193
946122	AF1-277 E	4.8856	50/50	4.8856
946131	AF1-278 C	7.9059	50/50	7.9059
946132	AF1-278 E	3.9322	50/50	3.9322
946211	AF1-286 C O1	0.8053	Adder	0.95
946212	AF1-286 E O1	0.5468	Adder	0.64
946221	AF1-287 C	0.8900	Adder	1.05
946222	AF1-287 E	0.5933	Adder	0.7
946381	AF1-302 C	1.2910	Adder	1.52
946382	AF1-302 E	1.7214	Adder	2.03
946401	AF1-304 C	4.0443	Adder	4.76
946402	AF1-304 E	2.6962	Adder	3.17
946421	AF1-306 C	2.9044	Adder	3.42
946422	AF1-306 E	11.6177	Adder	13.67
946771	AF1-217 C O2	0.8900	Adder	1.05
946772	AF1-217 E O2	0.5933	Adder	0.7
957161	AF2-010 C	1.7219	Adder	3.82

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957162	AF2-010 E	1.1604	Adder	2.58
957513	AF2-045 BAT	0.9480	Merchant Transmission	0.9480
957571	AF2-051 C O2	1.4419	Adder	3.2
957572	AF2-051 E O2	0.7428	Adder	1.65
957581	AF2-052 C	5.1682	50/50	5.1682
957582	AF2-052 E	2.5142	50/50	2.5142
957681	AF2-062 C	18.4584	50/50	18.4584
957682	AF2-062 E	12.3056	50/50	12.3056
957951	AF2-089 C	0.1189	Adder	0.26
957952	AF2-089 E	0.0613	Adder	0.14
958031	AF2-097 C	0.1117	Adder	0.25
958032	AF2-097 E	0.0745	Adder	0.17
958361	AF2-130 C	0.3810	Adder	0.85
958362	AF2-130 E	0.2540	Adder	0.56
958472	AF2-141 BAT	0.9252	Merchant Transmission	0.9252
958731	AF2-164 C O2	2.9121	Adder	6.46
958732	AF2-164 E O2	1.9414	Adder	4.31
958741	AF2-165 C	0.4319	Adder	0.96
958742	AF2-165 E	0.2879	Adder	0.64
958751	AF2-166 C	0.3810	Adder	0.85
958752	AF2-166 E	0.2540	Adder	0.56
958791	AF2-170 C	0.4253	Adder	0.94
958792	AF2-170 E	0.2835	Adder	0.63
959061	AF2-197 C O2	1.6204	Adder	3.6
959062	AF2-197 E O2	2.4306	Adder	5.4
959441	AF2-235 C	0.2162	Adder	0.48
959442	AF2-235 E	0.1441	Adder	0.32
959461	AF2-237 C	0.2250	Adder	0.5
959462	AF2-237 E	0.1500	Adder	0.33
959471	AF2-238 C	0.6388	Adder	1.42
959472	AF2-238 E	0.4259	Adder	0.95
959481	AF2-239 C	0.4662	Adder	1.03
959482	AF2-239 E	0.3738	Adder	0.83
959491	AF2-240 C	0.5691	Adder	1.26
959492	AF2-240 E	0.4848	Adder	1.08
959501	AF2-241 C	0.5955	Adder	1.32
959502	AF2-241 E	0.4584	Adder	1.02
959521	AF2-243 C	0.3239	Adder	0.72
959522	AF2-243 E	0.2159	Adder	0.48
959741	AF2-265 C	0.4578	Adder	1.02
959742	AF2-265 E	0.3407	Adder	0.76
959793	AF2-270 BAT	0.0805	Merchant Transmission	0.0805
959822	AF2-273 E	0.1241	Adder	0.28
960031	AF2-294 C	0.5840	Adder	1.3
960032	AF2-294 E	0.3893	Adder	0.86
960041	AF2-295 C	0.3711	Adder	0.82
960042	AF2-295 E	0.2474	Adder	0.55
960271	AF2-318 C	0.5039	Adder	1.12
960272	AF2-318 E	0.3360	Adder	0.75
960321	AF2-323 C O2	1.1466	Adder	2.55
960322	AF2-323 E O2	0.7644	Adder	1.7
961141	AF2-405	0.5269	Adder	1.17

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
961151	AF2-406	3.9521	Adder	8.77
961201	AF2-411 O2	42.5670	50/50	42.5670
961211	AF2-412 O2	20.6180	50/50	20.6180
961451	AF2-436	0.0560	Adder	0.12
WEC	WEC	0.0400	Confirmed LTF	0.0400
LGEE	LGEE	0.0377	Confirmed LTF	0.0377
CALDERWOOD	CALDERWOOD	0.0537	Confirmed LTF	0.0537
CBM-W2	CBM-W2	0.1310	Confirmed LTF	0.1310
CBM-W1	CBM-W1	2.6271	Confirmed LTF	2.6271
O-066	O-066	4.4621	Confirmed LTF	4.4621
CHEOAH	CHEOAH	0.0566	Confirmed LTF	0.0566
G-007	G-007	0.7634	Confirmed LTF	0.7634
MEC	MEC	0.1351	Confirmed LTF	0.1351
CATAWBA	CATAWBA	0.0851	Confirmed LTF	0.0851

13.5.8 Index 8

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344208	200769	26HOMER CY	PENELEC	999391	26HOMER CT	PENELEC	S	PN-P2-3-PN-230-9I	breaker	824.0	142.61	143.53	DC	16.84

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	2.2581	Adder	2.66
200831	26HNSMLK 4	2.3062	50/50	2.3062
200832	26HNSMLK 5	2.3062	50/50	2.3062
200838	26HOMER C2	55.4360	50/50	55.4360
200839	26HOMER C3	58.6863	50/50	58.6863
200894	26K02	6.8734	Adder	8.09
200898	26AA1-106	3.0195	Adder	3.55
201477	26Y2-055	4.7528	Adder	5.59
203349	26Z1-069 C	0.6127	50/50	0.6127
203907	26Y2-042	1.4740	Adder	1.73
203909	26Z1-038	2.2258	Adder	2.62
203910	26Z1-091	3.0268	Adder	3.56
203999	P-047 E	16.2571	Adder	19.13
294573	P-028 E	13.5487	Adder	15.94
915951	Y3-092 FTIR	139.7900	Merchant Transmission	139.7900
916202	Z1-069 E	15.1417	50/50	15.1417
917672	Z2-108 E	-1.9050	Adder	-2.24
917673	Z2-108 BAT	2.2412	Merchant Transmission	2.2412
918682	AA1-082 E	8.1675	Adder	9.61
919201	AA1-144 OP	22.9771	Adder	27.03
919491	AA2-000	46.5097	Adder	54.72
920341	AA2-132 (Suspended)	3.4030	Adder	4.0
922932	AB1-082 OP (Suspended)	5.4021	50/50	5.4021
923442	AB1-160 C	0.1750	50/50	0.1750
923443	AB1-160 E	4.3262	50/50	4.3262
930511	AB1-092	1.7077	Adder	2.01
936421	AD2-055	3.5159	Adder	4.14
938352	AE1-053 BAT	1.2451	Merchant Transmission	1.2451
938882	AE1-116 BAT	1.2997	Merchant Transmission	1.2997
938951	AE1-123	1.9425	Adder	2.29
939291	AE1-160 C	1.6510	Adder	1.94
939292	AE1-160 E	0.9490	Adder	1.12
940861	AE2-074 C	4.1018	50/50	4.1018
940862	AE2-074 E	5.3993	50/50	5.3993
941191	AE2-113 C	11.6833	Adder	13.75
941192	AE2-113 E	12.5792	Adder	14.8
941321	AE2-126 C	1.1273	Adder	1.33
941322	AE2-126 E	0.7515	Adder	0.88
941421	AE2-139 C	8.1793	Adder	9.62
941422	AE2-139 E	5.4528	Adder	6.42
942811	AE2-299 C	4.5446	Adder	5.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942812	AE2-299 E	18.1783	Adder	21.39
942961	AE2-316 C	5.5688	Adder	6.55
942962	AE2-316 E	7.9411	Adder	9.34
943151	AE2-344 C	9.5937	Adder	11.29
943152	AE2-344 E	6.3958	Adder	7.52
943351	AF1-006 C	1.6703	Adder	1.97
943352	AF1-006 E	0.9395	Adder	1.11
943751	AF1-043	10.5476	Adder	12.41
944261	AF1-094 C	1.5943	Adder	1.88
944262	AF1-094 E	1.0628	Adder	1.25
944281	AF1-096 C	1.5600	Adder	1.84
944282	AF1-096 E	1.0400	Adder	1.22
944301	AF1-098 C	6.7671	Adder	7.96
944302	AF1-098 E	4.5114	Adder	5.31
944321	AF1-100 C	11.7325	Adder	13.8
944322	AF1-100 E	7.8217	Adder	9.2
944381	AF1-103 O1	3.2766	Adder	3.85
944391	AF1-104 O1	2.4806	Adder	2.92
944411	AF1-106 O1	3.6963	Adder	4.35
944881	AF1-153 C O1	1.3320	Adder	1.57
944882	AF1-153 E O1	0.8880	Adder	1.04
944901	AF1-155 C	1.3359	Adder	1.57
944902	AF1-155 E	0.8906	Adder	1.05
945021	AF1-167 C	1.0020	Adder	1.18
945022	AF1-167 E	0.6692	Adder	0.79
945051	AF1-170 C	6.0691	Adder	7.14
945052	AF1-170 E	4.0460	Adder	4.76
945121	AF1-177	0.8191	Adder	0.96
945161	AF1-181	0.0611	Adder	0.07
945171	AF1-182	0.3051	Adder	0.36
945331	AF1-198	0.4849	Adder	0.57
945451	AF1-210 C	1.1249	Adder	1.32
945452	AF1-210 E	0.7499	Adder	0.88
945551	AF1-220 C	11.0386	Adder	12.99
945552	AF1-220 E	7.3631	Adder	8.66
945673	AF1-232 BAT	2.8870	Merchant Transmission	2.8870
946111	AF1-276 C	18.3526	50/50	18.3526
946112	AF1-276 E	9.0394	50/50	9.0394
946121	AF1-277 C	18.3526	50/50	18.3526
946122	AF1-277 E	9.0394	50/50	9.0394
946131	AF1-278 C	14.6273	50/50	14.6273
946132	AF1-278 E	7.2753	50/50	7.2753
946211	AF1-286 C O1	1.4970	Adder	1.76
946212	AF1-286 E O1	1.0165	Adder	1.2
946221	AF1-287 C	1.6546	Adder	1.95
946222	AF1-287 E	1.1031	Adder	1.3
946381	AF1-302 C	2.4318	Adder	2.86
946382	AF1-302 E	3.2424	Adder	3.81
946401	AF1-304 C	7.7632	Adder	9.13
946402	AF1-304 E	5.1755	Adder	6.09
946421	AF1-306 C	5.5327	Adder	6.51
946422	AF1-306 E	22.1309	Adder	26.04

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946771	AF1-217 C O2	1.6546	Adder	1.95
946772	AF1-217 E O2	1.1031	Adder	1.3
957161	AF2-010 C	3.2357	Adder	7.18
957162	AF2-010 E	2.1806	Adder	4.84
957513	AF2-045 BAT	1.3018	Merchant Transmission	1.3018
957571	AF2-051 C O2	2.6853	Adder	5.96
957572	AF2-051 E O2	1.3834	Adder	3.07
957581	AF2-052 C	9.5900	50/50	9.5900
957582	AF2-052 E	4.6654	50/50	4.6654
957681	AF2-062 C	34.1280	50/50	34.1280
957682	AF2-062 E	22.7520	50/50	22.7520
957951	AF2-089 C	0.2274	Adder	0.5
957952	AF2-089 E	0.1171	Adder	0.26
958031	AF2-097 C	0.2075	Adder	0.46
958032	AF2-097 E	0.1383	Adder	0.31
958361	AF2-130 C	0.7498	Adder	1.66
958362	AF2-130 E	0.4999	Adder	1.11
958472	AF2-141 BAT	1.3198	Merchant Transmission	1.3198
958731	AF2-164 C O2	5.3805	Adder	11.94
958732	AF2-164 E O2	3.5870	Adder	7.96
958741	AF2-165 C	0.8318	Adder	1.85
958742	AF2-165 E	0.5545	Adder	1.23
958751	AF2-166 C	0.7498	Adder	1.66
958752	AF2-166 E	0.4999	Adder	1.11
958791	AF2-170 C	0.7888	Adder	1.75
958792	AF2-170 E	0.5259	Adder	1.17
959061	AF2-197 C O2	3.0354	Adder	6.74
959062	AF2-197 E O2	4.5531	Adder	10.11
959441	AF2-235 C	0.4134	Adder	0.92
959442	AF2-235 E	0.2756	Adder	0.61
959461	AF2-237 C	0.4225	Adder	0.94
959462	AF2-237 E	0.2817	Adder	0.63
959471	AF2-238 C	1.1875	Adder	2.64
959472	AF2-238 E	0.7917	Adder	1.76
959481	AF2-239 C	0.8719	Adder	1.94
959482	AF2-239 E	0.6991	Adder	1.55
959491	AF2-240 C	1.0579	Adder	2.35
959492	AF2-240 E	0.9012	Adder	2.0
959501	AF2-241 C	1.1069	Adder	2.46
959502	AF2-241 E	0.8522	Adder	1.89
959521	AF2-243 C	0.6238	Adder	1.38
959522	AF2-243 E	0.4159	Adder	0.92
959741	AF2-265 C	0.8511	Adder	1.89
959742	AF2-265 E	0.6334	Adder	1.41
959793	AF2-270 BAT	0.1146	Merchant Transmission	0.1146
959822	AF2-273 E	0.2368	Adder	0.53
960031	AF2-294 C	1.0876	Adder	2.41
960032	AF2-294 E	0.7251	Adder	1.61
960041	AF2-295 C	0.7080	Adder	1.57
960042	AF2-295 E	0.4720	Adder	1.05
960271	AF2-318 C	0.9426	Adder	2.09
960272	AF2-318 E	0.6284	Adder	1.39

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960321	AF2-323 C O2	2.1354	Adder	4.74
960322	AF2-323 E O2	1.4236	Adder	3.16
960891	AF2-380 C	0.3777	Adder	0.84
960892	AF2-380 E	0.2518	Adder	0.56
961141	AF2-405	0.9795	Adder	2.17
961151	AF2-406	7.3464	Adder	16.31
961201	AF2-411 O2	78.8040	50/50	78.8040
961211	AF2-412 O2	38.0835	50/50	38.0835
961451	AF2-436	0.1051	Adder	0.23
961461	AF2-437	0.0640	Adder	0.14
WEC	WEC	0.0825	Confirmed LTF	0.0825
LGEE	LGEE	0.0884	Confirmed LTF	0.0884
CALDERWOOD	CALDERWOOD	0.0611	Confirmed LTF	0.0611
CBM-W2	CBM-W2	0.6552	Confirmed LTF	0.6552
CBM-W1	CBM-W1	5.1291	Confirmed LTF	5.1291
O-066	O-066	4.6435	Confirmed LTF	4.6435
CHEOAH	CHEOAH	0.0656	Confirmed LTF	0.0656
G-007	G-007	0.8476	Confirmed LTF	0.8476
MEC	MEC	0.3067	Confirmed LTF	0.3067
CATAWBA	CATAWBA	0.1176	Confirmed LTF	0.1176

13.5.9 Index 9

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344138	200769	26HOMER CY	PENELEC	999392	26HOMER CT	PENELEC	N	PN-P2-3-PN-230-9E	breaker	807.0	162.14	163.07	DC	16.85

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	2.2564	Adder	2.65
200831	26HNSMLK 4	2.3113	50/50	2.3113
200832	26HNSMLK 5	2.3113	50/50	2.3113
200838	26HOMER C2	55.6552	50/50	55.6552
200839	26HOMER C3	58.9184	50/50	58.9184
200894	26K02	6.8715	Adder	8.08
200898	26AA1-106	3.0222	Adder	3.56
201477	26Y2-055	4.7584	Adder	5.6
203349	26Z1-069 C	0.6141	50/50	0.6141
203907	26Y2-042	1.4692	Adder	1.73
203909	26Z1-038	2.2240	Adder	2.62
203910	26Z1-091	3.0293	Adder	3.56
203999	P-047 E	16.2899	Adder	19.16
294573	P-028 E	13.5385	Adder	15.93
915951	Y3-092 FTIR	139.7200	Merchant Transmission	139.7200
916202	Z1-069 E	15.1780	50/50	15.1780
917672	Z2-108 E	-1.9286	Adder	-2.27
917673	Z2-108 BAT	2.2689	Merchant Transmission	2.2689
918682	AA1-082 E	8.1714	Adder	9.61
919201	AA1-144 OP	22.9896	Adder	27.05
919491	AA2-000	46.4350	Adder	54.63
920341	AA2-132 (Suspended)	3.4075	Adder	4.01
922932	AB1-082 OP (Suspended)	5.4154	50/50	5.4154
923442	AB1-160 C	0.1755	50/50	0.1755
923443	AB1-160 E	4.3366	50/50	4.3366
930511	AB1-092	1.7050	Adder	2.01
936421	AD2-055	3.5102	Adder	4.13
938352	AE1-053 BAT	1.2605	Merchant Transmission	1.2605
938882	AE1-116 BAT	1.3145	Merchant Transmission	1.3145
938951	AE1-123	1.9403	Adder	2.28
939291	AE1-160 C	1.6511	Adder	1.94
939292	AE1-160 E	0.9491	Adder	1.12
940861	AE2-074 C	4.1119	50/50	4.1119
940862	AE2-074 E	5.4127	50/50	5.4127
941191	AE2-113 C	11.7035	Adder	13.77
941192	AE2-113 E	12.6009	Adder	14.82
941321	AE2-126 C	1.1250	Adder	1.32
941322	AE2-126 E	0.7500	Adder	0.88
941421	AE2-139 C	8.1818	Adder	9.63
941422	AE2-139 E	5.4546	Adder	6.42
942811	AE2-299 C	4.5470	Adder	5.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942812	AE2-299 E	18.1881	Adder	21.4
942961	AE2-316 C	5.5705	Adder	6.55
942962	AE2-316 E	7.9436	Adder	9.35
943151	AE2-344 C	9.5973	Adder	11.29
943152	AE2-344 E	6.3982	Adder	7.53
943351	AF1-006 C	1.6704	Adder	1.97
943352	AF1-006 E	0.9396	Adder	1.11
943751	AF1-043	10.5306	Adder	12.39
944261	AF1-094 C	1.5946	Adder	1.88
944262	AF1-094 E	1.0630	Adder	1.25
944281	AF1-096 C	1.5601	Adder	1.84
944282	AF1-096 E	1.0401	Adder	1.22
944301	AF1-098 C	6.7704	Adder	7.97
944302	AF1-098 E	4.5136	Adder	5.31
944321	AF1-100 C	11.6905	Adder	13.75
944322	AF1-100 E	7.7936	Adder	9.17
944381	AF1-103 O1	3.2805	Adder	3.86
944391	AF1-104 O1	2.4801	Adder	2.92
944411	AF1-106 O1	3.7024	Adder	4.36
944881	AF1-153 C O1	1.3309	Adder	1.57
944882	AF1-153 E O1	0.8873	Adder	1.04
944901	AF1-155 C	1.3348	Adder	1.57
944902	AF1-155 E	0.8898	Adder	1.05
945021	AF1-167 C	1.0018	Adder	1.18
945022	AF1-167 E	0.6691	Adder	0.79
945051	AF1-170 C	6.0699	Adder	7.14
945052	AF1-170 E	4.0466	Adder	4.76
945121	AF1-177	0.8201	Adder	0.96
945161	AF1-181	0.0609	Adder	0.07
945171	AF1-182	0.3039	Adder	0.36
945331	AF1-198	0.4858	Adder	0.57
945451	AF1-210 C	1.1243	Adder	1.32
945452	AF1-210 E	0.7495	Adder	0.88
945551	AF1-220 C	11.0348	Adder	12.98
945552	AF1-220 E	7.3605	Adder	8.66
945673	AF1-232 BAT	2.9200	Merchant Transmission	2.9200
946111	AF1-276 C	18.3982	50/50	18.3982
946112	AF1-276 E	9.0618	50/50	9.0618
946121	AF1-277 C	18.3982	50/50	18.3982
946122	AF1-277 E	9.0618	50/50	9.0618
946131	AF1-278 C	14.6636	50/50	14.6636
946132	AF1-278 E	7.2934	50/50	7.2934
946211	AF1-286 C O1	1.4995	Adder	1.76
946212	AF1-286 E O1	1.0182	Adder	1.2
946221	AF1-287 C	1.6553	Adder	1.95
946222	AF1-287 E	1.1035	Adder	1.3
946381	AF1-302 C	2.4325	Adder	2.86
946382	AF1-302 E	3.2434	Adder	3.82
946401	AF1-304 C	7.7637	Adder	9.13
946402	AF1-304 E	5.1758	Adder	6.09
946421	AF1-306 C	5.5281	Adder	6.5
946422	AF1-306 E	22.1124	Adder	26.01

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946771	AF1-217 C O2	1.6553	Adder	1.95
946772	AF1-217 E O2	1.1035	Adder	1.3
957161	AF2-010 C	3.2363	Adder	7.18
957162	AF2-010 E	2.1810	Adder	4.84
957513	AF2-045 BAT	1.3172	Merchant Transmission	1.3172
957571	AF2-051 C O2	2.6879	Adder	5.97
957572	AF2-051 E O2	1.3847	Adder	3.07
957581	AF2-052 C	9.6122	50/50	9.6122
957582	AF2-052 E	4.6762	50/50	4.6762
957681	AF2-062 C	34.2168	50/50	34.2168
957682	AF2-062 E	22.8112	50/50	22.8112
957951	AF2-089 C	0.2274	Adder	0.5
957952	AF2-089 E	0.1171	Adder	0.26
958031	AF2-097 C	0.2075	Adder	0.46
958032	AF2-097 E	0.1383	Adder	0.31
958361	AF2-130 C	0.7494	Adder	1.66
958362	AF2-130 E	0.4996	Adder	1.11
958472	AF2-141 BAT	1.3361	Merchant Transmission	1.3361
958731	AF2-164 C O2	5.3922	Adder	11.97
958732	AF2-164 E O2	3.5948	Adder	7.98
958741	AF2-165 C	0.8318	Adder	1.85
958742	AF2-165 E	0.5545	Adder	1.23
958751	AF2-166 C	0.7494	Adder	1.66
958752	AF2-166 E	0.4996	Adder	1.11
958791	AF2-170 C	0.7887	Adder	1.75
958792	AF2-170 E	0.5258	Adder	1.17
959061	AF2-197 C O2	3.0369	Adder	6.74
959062	AF2-197 E O2	4.5553	Adder	10.11
959441	AF2-235 C	0.4134	Adder	0.92
959442	AF2-235 E	0.2756	Adder	0.61
959461	AF2-237 C	0.4226	Adder	0.94
959462	AF2-237 E	0.2817	Adder	0.63
959471	AF2-238 C	1.1896	Adder	2.64
959472	AF2-238 E	0.7931	Adder	1.76
959481	AF2-239 C	0.8726	Adder	1.94
959482	AF2-239 E	0.6996	Adder	1.55
959491	AF2-240 C	1.0596	Adder	2.35
959492	AF2-240 E	0.9027	Adder	2.0
959501	AF2-241 C	1.1087	Adder	2.46
959502	AF2-241 E	0.8536	Adder	1.89
959521	AF2-243 C	0.6239	Adder	1.38
959522	AF2-243 E	0.4159	Adder	0.92
959741	AF2-265 C	0.8525	Adder	1.89
959742	AF2-265 E	0.6344	Adder	1.41
959793	AF2-270 BAT	0.1159	Merchant Transmission	0.1159
959822	AF2-273 E	0.2367	Adder	0.53
960031	AF2-294 C	1.0890	Adder	2.42
960032	AF2-294 E	0.7260	Adder	1.61
960041	AF2-295 C	0.7074	Adder	1.57
960042	AF2-295 E	0.4716	Adder	1.05
960271	AF2-318 C	0.9433	Adder	2.09
960272	AF2-318 E	0.6289	Adder	1.4

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960321	AF2-323 C O2	2.1372	Adder	4.74
960322	AF2-323 E O2	1.4248	Adder	3.16
960891	AF2-380 C	0.3764	Adder	0.84
960892	AF2-380 E	0.2509	Adder	0.56
961141	AF2-405	0.9811	Adder	2.18
961151	AF2-406	7.3586	Adder	16.33
961201	AF2-411 O2	78.9900	50/50	78.9900
961211	AF2-412 O2	38.1862	50/50	38.1862
961451	AF2-436	0.1051	Adder	0.23
961461	AF2-437	0.0638	Adder	0.14
WEC	WEC	0.0564	Confirmed LTF	0.0564
LGEE	LGEE	0.0405	Confirmed LTF	0.0405
CALDERWOOD	CALDERWOOD	0.1039	Confirmed LTF	0.1039
CBM-W1	CBM-W1	4.1033	Confirmed LTF	4.1033
O-066	O-066	5.2416	Confirmed LTF	5.2416
CHEOAH	CHEOAH	0.1081	Confirmed LTF	0.1081
G-007	G-007	0.9412	Confirmed LTF	0.9412
MEC	MEC	0.1732	Confirmed LTF	0.1732
CATAWBA	CATAWBA	0.1481	Confirmed LTF	0.1481

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344108	200795	26SHELOCTA	PENELEC	200810	26KEYSTONE	PENELEC	1	ATSI-P2-3-CEI-345-004D	breaker	917.0	189.02	189.73	DC	14.3

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200636	26IUP CO-G	0.7309	50/50	0.7309
200794	26CONEMAGH	0.4993	50/50	0.4993
200805	26COLVER13 (Deactivation : 01/09/2020)	29.3843	50/50	29.3843
200809	26SITHE	2.2832	50/50	2.2832
200833	26SEWRDB34	24.0546	50/50	24.0546
200837	26HOMER C1	39.3219	50/50	39.3219
200838	26HOMER C2	34.1161	50/50	34.1161
200839	26HOMER C3	36.1164	50/50	36.1164
200846	26FORWARD	0.2706	50/50	0.2706
200864	K-013 E	6.2749	50/50	6.2749
200883	Q-053 E	9.9862	Adder	11.75
200888	26HIGHLAND	0.5912	50/50	0.5912
200894	26K02	7.1452	Adder	8.41
200898	26AA1-106	2.6743	Adder	3.15
200925	26R32	0.6821	50/50	0.6821
201477	26Y2-055	4.9421	Adder	5.81
202158	26CON.GEN1	0.1250	50/50	0.1250
203910	26Z1-091	2.4312	Adder	2.86
203999	P-047 E	12.4397	Adder	14.63
235003	AC1-025 E	0.1777	Adder	0.21
236828	01GRAYMONT	0.4827	Adder	0.57
290086	Q-036 E	7.3243	Adder	8.62
292350	K-023	5.7633	Adder	6.78
292542	L-013 1	5.6056	Adder	6.59
293301	N-039 E	13.1545	Adder	15.48
293393	V3-030E	6.1438	Adder	7.23
293432	R-040 E	0.3153	Adder	0.37
293603	O-018 E	13.7093	50/50	13.7093
293902	O-048 E	5.0451	Adder	5.94
294515	O38_P22	11.5102	Adder	13.54
294903	P-060 E	8.9489	Adder	10.53
296332	R-032 E	15.8184	50/50	15.8184
913142	Y1-033 E OP1	4.5943	Adder	5.41
915951	Y3-092 FTIR	216.0000	Merchant Transmission	216.0000
916202	Z1-069 E	9.9846	Adder	11.75
917672	Z2-108 E	3.1532	Adder	3.71
918682	AA1-082 E	6.9319	Adder	8.16
919201	AA1-144 OP	19.7240	Adder	23.2

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
919491	AA2-000	61.9605	Adder	72.89
920341	AA2-132 (Suspended)	2.6754	Adder	3.15
922932	AB1-082 OP (Suspended)	3.6694	Adder	4.32
923443	AB1-160 E	2.8527	Adder	3.36
930511	AB1-092	2.2750	Adder	2.68
935191	AD1-154	3.8233	Adder	4.5
936421	AD2-055	4.6838	Adder	5.51
936991	AD2-133 C	3.2959	Adder	3.88
936992	AD2-133 E	15.0752	Adder	17.74
938351	AE1-053	1.7518	Adder	2.06
938881	AE1-116	0.9335	Adder	1.1
938951	AE1-123	2.9365	Adder	3.45
938991	AE1-128 C	15.8502	Adder	18.65
938992	AE1-128 E	10.5668	Adder	12.43
939171	AE1-147 C	1.4523	Adder	1.71
939172	AE1-147 E	0.9682	Adder	1.14
939291	AE1-160 C	2.1456	Adder	2.52
939292	AE1-160 E	1.2333	Adder	1.45
940201	AE2-001 C	1.4499	Adder	1.71
940202	AE2-001 E	0.9666	Adder	1.14
940681	AE2-055 C (Suspended)	1.4141	Adder	1.66
940682	AE2-055 E (Suspended)	0.9428	Adder	1.11
940861	AE2-074 C	2.7861	Adder	3.28
940862	AE2-074 E	3.6675	Adder	4.31
941191	AE2-113 C	11.1012	Adder	13.06
941192	AE2-113 E	11.9524	Adder	14.06
941231	AE2-117 C	1.6666	Adder	1.96
941232	AE2-117 E	1.1111	Adder	1.31
941241	AE2-118 C	1.6666	Adder	1.96
941242	AE2-118 E	1.1111	Adder	1.31
941261	AE2-120 C	1.4486	Adder	1.7
941262	AE2-120 E	0.9657	Adder	1.14
941271	AE2-121 C	0.7743	Adder	0.91
941272	AE2-121 E	0.5170	Adder	0.61
941321	AE2-126 C	1.9222	Adder	2.26
941322	AE2-126 E	1.2815	Adder	1.51
941331	AE2-129 C	2.0674	Adder	2.43
941332	AE2-129 E	1.3783	Adder	1.62
941351	AE2-131 C	2.0674	Adder	2.43
941352	AE2-131 E	1.3783	Adder	1.62
941421	AE2-139 C	7.4309	Adder	8.74
941422	AE2-139 E	4.9540	Adder	5.83
942121	AE2-224 C	16.2642	50/50	16.2642
942122	AE2-224 E	10.8428	50/50	10.8428
942351	AE2-248 C	1.1433	Adder	1.35
942352	AE2-248 E	0.7622	Adder	0.9
942491	AE2-262 C	6.5458	Adder	7.7
942492	AE2-262 E	4.3988	Adder	5.18
942501	AE2-263 C	6.1531	Adder	7.24
942502	AE2-263 E	4.1082	Adder	4.83
942511	AE2-264 C	7.8026	Adder	9.18
942512	AE2-264 E	5.2017	Adder	6.12

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942811	AE2-299 C	5.2363	Adder	6.16
942812	AE2-299 E	20.9451	Adder	24.64
942961	AE2-316 C	6.1301	Adder	7.21
942962	AE2-316 E	8.7415	Adder	10.28
943151	AE2-344 C	12.0975	Adder	14.23
943152	AE2-344 E	8.0650	Adder	9.49
943351	AF1-006 C	2.1870	Adder	2.57
943352	AF1-006 E	1.2302	Adder	1.45
943711	AF1-039 C O1	1.2154	Adder	1.43
943712	AF1-039 E O1	0.8103	Adder	0.95
943751	AF1-043	14.0515	Adder	16.53
944001	AF1-068 C O1	1.5196	Adder	1.79
944002	AF1-068 E O1	0.8548	Adder	1.01
944181	AF1-086 C O1	4.2701	Adder	5.02
944182	AF1-086 E O1	18.5773	Adder	21.86
944261	AF1-094 C	1.9969	Adder	2.35
944262	AF1-094 E	1.3312	Adder	1.57
944281	AF1-096 C	2.0274	Adder	2.39
944282	AF1-096 E	1.3516	Adder	1.59
944301	AF1-098 C	7.9568	Adder	9.36
944302	AF1-098 E	5.3045	Adder	6.24
944311	AF1-099 C	9.9366	Adder	11.69
944312	AF1-099 E	6.6244	Adder	7.79
944321	AF1-100 C	21.1140	Adder	24.84
944322	AF1-100 E	14.0760	Adder	16.56
944381	AF1-103 O1	3.4080	Adder	4.01
944391	AF1-104 O1	3.5894	Adder	4.22
944411	AF1-106 O1	2.8975	Adder	3.41
944471	AF1-112 C	1.5285	Adder	1.8
944472	AF1-112 E	0.8598	Adder	1.01
944671	AF1-132 C O1	1.4221	Adder	1.67
944672	AF1-132 E O1	0.9481	Adder	1.12
944691	AF1-134 C O1	2.2431	Adder	2.64
944692	AF1-134 E O1	1.4954	Adder	1.76
944751	AF1-140 C	2.1234	Adder	2.5
944752	AF1-140 E	1.4156	Adder	1.67
944771	AF1-142 C	15.8986	Adder	18.7
944772	AF1-142 E	10.5990	Adder	12.47
944781	AF1-143 C	10.5106	Adder	12.37
944782	AF1-143 E	5.6056	Adder	6.59
944841	AF1-149 C	1.4485	Adder	1.7
944842	AF1-149 E	0.9657	Adder	1.14
944881	AF1-153 C O1	1.7741	Adder	2.09
944882	AF1-153 E O1	1.1827	Adder	1.39
944901	AF1-155 C	1.7742	Adder	2.09
944902	AF1-155 E	1.1828	Adder	1.39
945021	AF1-167 C	1.1249	Adder	1.32
945022	AF1-167 E	0.7513	Adder	0.88
945051	AF1-170 C	8.2473	Adder	9.7
945052	AF1-170 E	5.4982	Adder	6.47
945121	AF1-177	0.8520	Adder	1.0
945161	AF1-181	0.1132	Adder	0.13

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945171	AF1-182	0.5659	Adder	0.67
945181	AF1-183	0.1499	Adder	0.18
945331	AF1-198	0.3852	Adder	0.45
945451	AF1-210 C	1.2304	Adder	1.45
945452	AF1-210 E	0.8203	Adder	0.97
945491	AF1-214 C	1.4487	Adder	1.7
945492	AF1-214 E	0.9658	Adder	1.14
945551	AF1-220 C	14.6462	Adder	17.23
945552	AF1-220 E	9.7695	Adder	11.49
945671	AF1-232 C O2	21.9541	Adder	25.83
945672	AF1-232 E O2	11.8215	Adder	13.91
945751	AF1-240 C O1	2.2940	Adder	2.7
945752	AF1-240 E O1	1.5293	Adder	1.8
946071	AF1-272 C O1	22.7773	50/50	22.7773
946072	AF1-272 E O1	15.1848	50/50	15.1848
946081	AF1-273 C O1	10.7976	Adder	12.7
946082	AF1-273 E O1	7.1984	Adder	8.47
946111	AF1-276 C	12.8576	Adder	15.13
946112	AF1-276 E	6.3328	Adder	7.45
946121	AF1-277 C	12.8576	Adder	15.13
946122	AF1-277 E	6.3328	Adder	7.45
946131	AF1-278 C	10.2477	Adder	12.06
946132	AF1-278 E	5.0970	Adder	6.0
946211	AF1-286 C O1	1.1735	Adder	1.38
946212	AF1-286 E O1	0.7968	Adder	0.94
946221	AF1-287 C	2.0775	Adder	2.44
946222	AF1-287 E	1.3850	Adder	1.63
946381	AF1-302 C	2.6769	Adder	3.15
946382	AF1-302 E	3.5692	Adder	4.2
946401	AF1-304 C	10.1689	Adder	11.96
946402	AF1-304 E	6.7793	Adder	7.98
946421	AF1-306 C	7.4059	Adder	8.71
946422	AF1-306 E	29.6235	Adder	34.85
946431	AF1-307 C	10.4821	50/50	10.4821
946432	AF1-307 E	6.9881	50/50	6.9881
946571	AF1-321 C O1	3.2800	50/50	3.2800
946572	AF1-321 E O1	2.1866	50/50	2.1866
946771	AF1-217 C O2	2.0775	Adder	2.44
946772	AF1-217 E O2	1.3850	Adder	1.63
957001	AF2-001 C O2	3.2400	50/50	3.2400
957002	AF2-001 E O2	2.1600	50/50	2.1600
957011	AF2-002 C O2	1.6200	50/50	1.6200
957012	AF2-002 E O2	1.0800	50/50	1.0800
957161	AF2-010 C	4.0601	Adder	9.01
957162	AF2-010 E	2.7361	Adder	6.07
957451	AF2-039 C	0.6828	Adder	1.52
957452	AF2-039 E	0.4552	Adder	1.01
957512	AF2-045 E	2.1054	Adder	4.67
957561	AF2-050 C	8.1321	50/50	8.1321
957562	AF2-050 E	5.4214	50/50	5.4214
957571	AF2-051 C O2	3.1694	Adder	7.04
957572	AF2-051 E O2	1.6327	Adder	3.62

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957581	AF2-052 C	3.6694	Adder	8.15
957582	AF2-052 E	1.7851	Adder	3.96
957681	AF2-062 C	12.3878	Adder	27.5
957682	AF2-062 E	8.2586	Adder	18.33
957931	AF2-087 C	0.3080	Adder	0.68
957932	AF2-087 E	0.4241	Adder	0.94
957941	AF2-088 C	0.3288	Adder	0.73
957942	AF2-088 E	0.2192	Adder	0.49
957951	AF2-089 C	0.2955	Adder	0.66
957952	AF2-089 E	0.1522	Adder	0.34
957981	AF2-092 C	0.8375	Adder	1.86
957982	AF2-092 E	0.5583	Adder	1.24
958031	AF2-097 C	0.2717	Adder	0.6
958032	AF2-097 E	0.1811	Adder	0.4
958101	AF2-104 C	0.2639	Adder	0.59
958102	AF2-104 E	0.1759	Adder	0.39
958271	AF2-121 C	1.0957	Adder	2.43
958272	AF2-121 E	0.7305	Adder	1.62
958361	AF2-130 C	1.0593	Adder	2.35
958362	AF2-130 E	0.7062	Adder	1.57
958411	AF2-135 C	0.2785	Adder	0.62
958412	AF2-135 E	0.1857	Adder	0.41
958471	AF2-141	0.7427	Adder	1.65
958731	AF2-164 C O2	4.9910	Adder	11.08
958732	AF2-164 E O2	3.3274	Adder	7.39
958741	AF2-165 C	1.0893	Adder	2.42
958742	AF2-165 E	0.7262	Adder	1.61
958751	AF2-166 C	1.0593	Adder	2.35
958752	AF2-166 E	0.7062	Adder	1.57
958791	AF2-170 C	1.1414	Adder	2.53
958792	AF2-170 E	0.7609	Adder	1.69
959061	AF2-197 C O2	2.5762	Adder	5.72
959062	AF2-197 E O2	3.8643	Adder	8.58
959301	AF2-221 C	1.7042	50/50	1.7042
959302	AF2-221 E	2.3534	50/50	2.3534
959401	AF2-231 C	0.2208	Adder	0.49
959402	AF2-231 E	0.1472	Adder	0.33
959441	AF2-235 C	0.5372	Adder	1.19
959442	AF2-235 E	0.3582	Adder	0.8
959461	AF2-237 C	0.5292	Adder	1.17
959462	AF2-237 E	0.3528	Adder	0.78
959471	AF2-238 C	0.9386	Adder	2.08
959472	AF2-238 E	0.6257	Adder	1.39
959481	AF2-239 C	0.7226	Adder	1.6
959482	AF2-239 E	0.5794	Adder	1.29
959491	AF2-240 C	0.8293	Adder	1.84
959492	AF2-240 E	0.7064	Adder	1.57
959501	AF2-241 C	0.8677	Adder	1.93
959502	AF2-241 E	0.6680	Adder	1.48
959521	AF2-243 C	0.8169	Adder	1.81
959522	AF2-243 E	0.5446	Adder	1.21
959741	AF2-265 C	0.6727	Adder	1.49

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959742	AF2-265 E	0.5006	Adder	1.11
959792	AF2-270 E	0.4341	Adder	0.96
959802	AF2-271 E	0.3002	Adder	0.67
959822	AF2-273 E	0.2616	Adder	0.58
960022	AF2-293 E	0.0748	Adder	0.17
960031	AF2-294 C	0.8551	Adder	1.9
960032	AF2-294 E	0.5700	Adder	1.27
960041	AF2-295 C	0.9403	Adder	2.09
960042	AF2-295 E	0.6269	Adder	1.39
960051	AF2-296 C	1.1888	Adder	2.64
960052	AF2-296 E	0.7926	Adder	1.76
960211	AF2-312 C	1.2463	Adder	2.77
960212	AF2-312 E	0.8308	Adder	1.84
960271	AF2-318 C	0.7812	Adder	1.73
960272	AF2-318 E	0.5208	Adder	1.16
960321	AF2-323 C O2	2.5303	Adder	5.62
960322	AF2-323 E O2	1.6869	Adder	3.74
960391	AF2-330 C	5.5322	Adder	12.28
960392	AF2-330 E	2.4196	Adder	5.37
960451	AF2-336 C O2	1.3962	Adder	3.1
960452	AF2-336 E O2	0.9308	Adder	2.07
960461	AF2-337 C O2	1.3962	Adder	3.1
960462	AF2-337 E O2	0.9308	Adder	2.07
960471	AF2-338 C O2	1.3962	Adder	3.1
960472	AF2-338 E O2	0.9308	Adder	2.07
960481	AF2-339 C O2	1.3962	Adder	3.1
960482	AF2-339 E O2	0.9308	Adder	2.07
960901	AF2-381 C	21.8509	50/50	21.8509
960902	AF2-381 E	11.4991	50/50	11.4991
961141	AF2-405	0.7678	Adder	1.7
961151	AF2-406	5.7587	Adder	12.78
961201	AF2-411 O2	26.4962	Adder	58.82
961211	AF2-412 O2	12.3074	Adder	27.32
961451	AF2-436	0.0883	Adder	0.2
NEWTON	NEWTON	1.4033	Confirmed LTF	1.4033
FARMERCITY	FARMERCITY	0.0725	Confirmed LTF	0.0725
G-007A	G-007A	2.1458	Confirmed LTF	2.1458
VFT	VFT	6.2243	Confirmed LTF	6.2243
CALDERWOOD	CALDERWOOD	0.6118	Confirmed LTF	0.6118
PRAIRIE	PRAIRIE	3.3398	Confirmed LTF	3.3398
CHEOAH	CHEOAH	0.6151	Confirmed LTF	0.6151
EDWARDS	EDWARDS	0.4592	Confirmed LTF	0.4592
TILTON	TILTON	0.8285	Confirmed LTF	0.8285
MADISON	MADISON	0.0625	Confirmed LTF	0.0625
GIBSON	GIBSON	0.7158	Confirmed LTF	0.7158
BLUEG	BLUEG	2.2828	Confirmed LTF	2.2828
TRIMBLE	TRIMBLE	0.7324	Confirmed LTF	0.7324
CATAWBA	CATAWBA	0.4053	Confirmed LTF	0.4053

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344238	200810	26KEYSTONE	PENELEC	999401	KEYSTONE	PJM	4	PJM500_PN_P4-500-001D	breaker	635.0	141.9	142.52	DC	8.6

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200636	26IUP CO-G	0.5021	50/50	0.5021
200794	26CONEMAGH	0.3401	50/50	0.3401
200805	26COLVER13 (Deactivation : 01/09/2020)	19.4986	50/50	19.4986
200809	26SITHE	1.5787	50/50	1.5787
200833	26SEWRDB34	16.4203	50/50	16.4203
200837	26HOMER C1	27.1889	50/50	27.1889
200838	26HOMER C2	22.7783	50/50	22.7783
200839	26HOMER C3	24.1138	50/50	24.1138
200846	26FORWARD	0.1849	50/50	0.1849
200864	K-013 E	4.2867	50/50	4.2867
200883	Q-053 E	6.7034	Adder	7.89
200888	26HIGHLAND	0.4021	50/50	0.4021
200894	26K02	4.2797	Adder	5.03
200898	26AA1-106	1.6191	Adder	1.9
200906	26KEYSTN#3	0.8346	50/50	0.8346
200925	26R32	0.4640	50/50	0.4640
201477	26Y2-055	2.5158	Adder	2.96
202158	26CON.GEN1	0.0871	50/50	0.0871
202160	26CON.GEN2	0.0608	50/50	0.0608
203910	26Z1-091	1.4616	Adder	1.72
203999	P-047 E	7.6650	Adder	9.02
235003	AC1-025 E	0.1066	Adder	0.13
236828	01GRAYMONT	0.2892	Adder	0.34
290086	Q-036 E	4.7423	Adder	5.58
292350	K-023	3.9316	Adder	4.63
292542	L-013 1	3.8240	Adder	4.5
293301	N-039 E	8.9004	Adder	10.47
293393	V3-030E	4.0991	Adder	4.82
293432	R-040 E	0.2151	Adder	0.25
293603	O-018 E	9.3246	50/50	9.3246
293902	O-048 E	3.4416	Adder	4.05
294515	O38_P22	7.7878	Adder	9.16
294903	P-060 E	6.1011	Adder	7.18
296332	R-032 E	10.7592	50/50	10.7592
913142	Y1-033 E OP1	3.1285	Adder	3.68
916202	Z1-069 E	6.1111	Adder	7.19
917672	Z2-108 E	2.1510	Adder	2.53
918682	AA1-082 E	4.1676	Adder	4.9
919201	AA1-144 OP	11.8571	Adder	13.95
919491	AA2-000	36.9465	Adder	43.47

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
920341	AA2-132 (Suspended)	1.6179	Adder	1.9
922932	AB1-082 OP (Suspended)	2.2235	Adder	2.62
923443	AB1-160 E	1.7460	Adder	2.05
930511	AB1-092	1.3566	Adder	1.6
935191	AD1-154	2.3474	Adder	2.76
936421	AD2-055	2.7929	Adder	3.29
936991	AD2-133 C	2.1340	Adder	2.51
936992	AD2-133 E	9.7609	Adder	11.48
938351	AE1-053	1.1950	Adder	1.41
938881	AE1-116	0.6374	Adder	0.75
938951	AE1-123	1.6446	Adder	1.93
938991	AE1-128 C	12.6893	50/50	12.6893
938992	AE1-128 E	8.4595	50/50	8.4595
939171	AE1-147 C	0.8699	Adder	1.02
939172	AE1-147 E	0.5799	Adder	0.68
939291	AE1-160 C	1.0211	Adder	1.2
939292	AE1-160 E	0.5869	Adder	0.69
940201	AE2-001 C	0.8685	Adder	1.02
940202	AE2-001 E	0.5790	Adder	0.68
940681	AE2-055 C (Suspended)	0.8483	Adder	1.0
940682	AE2-055 E (Suspended)	0.5656	Adder	0.67
940861	AE2-074 C	1.6883	Adder	1.99
940862	AE2-074 E	2.2224	Adder	2.61
941191	AE2-113 C	6.6071	Adder	7.77
941192	AE2-113 E	7.1137	Adder	8.37
941231	AE2-117 C	1.0882	Adder	1.28
941232	AE2-117 E	0.7255	Adder	0.85
941241	AE2-118 C	1.0882	Adder	1.28
941242	AE2-118 E	0.7255	Adder	0.85
941261	AE2-120 C	0.8677	Adder	1.02
941262	AE2-120 E	0.5785	Adder	0.68
941271	AE2-121 C	0.4637	Adder	0.55
941272	AE2-121 E	0.3096	Adder	0.36
941321	AE2-126 C	1.1540	Adder	1.36
941322	AE2-126 E	0.7694	Adder	0.91
941331	AE2-129 C	1.3112	Adder	1.54
941332	AE2-129 E	0.8741	Adder	1.03
941351	AE2-131 C	1.3112	Adder	1.54
941352	AE2-131 E	0.8741	Adder	1.03
941421	AE2-139 C	4.4628	Adder	5.25
941422	AE2-139 E	2.9752	Adder	3.5
942121	AE2-224 C	11.0940	50/50	11.0940
942122	AE2-224 E	7.3960	50/50	7.3960
942351	AE2-248 C	0.6854	Adder	0.81
942352	AE2-248 E	0.4570	Adder	0.54
942491	AE2-262 C	3.9028	Adder	4.59
942492	AE2-262 E	2.6227	Adder	3.09
942501	AE2-263 C	3.6686	Adder	4.32
942502	AE2-263 E	2.4494	Adder	2.88
942511	AE2-264 C	5.1755	Adder	6.09
942512	AE2-264 E	3.4503	Adder	4.06
942811	AE2-299 C	2.1929	Adder	2.58

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942812	AE2-299 E	8.7715	Adder	10.32
942961	AE2-316 C	3.5685	Adder	4.2
942962	AE2-316 E	5.0887	Adder	5.99
943151	AE2-344 C	4.6736	Adder	5.5
943152	AE2-344 E	3.1157	Adder	3.67
943351	AF1-006 C	0.8073	Adder	0.95
943352	AF1-006 E	0.4541	Adder	0.53
943711	AF1-039 C O1	0.8277	Adder	0.97
943712	AF1-039 E O1	0.5518	Adder	0.65
943751	AF1-043	8.3788	Adder	9.86
944001	AF1-068 C O1	0.9112	Adder	1.07
944002	AF1-068 E O1	0.5125	Adder	0.6
944181	AF1-086 C O1	2.7924	Adder	3.29
944182	AF1-086 E O1	12.1484	Adder	14.29
944261	AF1-094 C	0.8554	Adder	1.01
944262	AF1-094 E	0.5702	Adder	0.67
944281	AF1-096 C	0.9648	Adder	1.14
944282	AF1-096 E	0.6432	Adder	0.76
944301	AF1-098 C	3.3713	Adder	3.97
944302	AF1-098 E	2.2475	Adder	2.64
944311	AF1-099 C	5.9244	Adder	6.97
944312	AF1-099 E	3.9496	Adder	4.65
944321	AF1-100 C	12.6059	Adder	14.83
944322	AF1-100 E	8.4040	Adder	9.89
944381	AF1-103 O1	1.7343	Adder	2.04
944411	AF1-106 O1	1.7626	Adder	2.07
944471	AF1-112 C	0.9162	Adder	1.08
944472	AF1-112 E	0.5154	Adder	0.61
944671	AF1-132 C O1	0.8528	Adder	1.0
944672	AF1-132 E O1	0.5685	Adder	0.67
944691	AF1-134 C O1	1.4353	Adder	1.69
944692	AF1-134 E O1	0.9569	Adder	1.13
944751	AF1-140 C	1.4386	Adder	1.69
944752	AF1-140 E	0.9590	Adder	1.13
944771	AF1-142 C	9.4791	Adder	11.15
944772	AF1-142 E	6.3194	Adder	7.43
944781	AF1-143 C	7.1701	Adder	8.44
944782	AF1-143 E	3.8240	Adder	4.5
944841	AF1-149 C	0.8677	Adder	1.02
944842	AF1-149 E	0.5785	Adder	0.68
944881	AF1-153 C O1	1.0338	Adder	1.22
944882	AF1-153 E O1	0.6892	Adder	0.81
944901	AF1-155 C	1.0336	Adder	1.22
944902	AF1-155 E	0.6890	Adder	0.81
945021	AF1-167 C	0.6395	Adder	0.75
945022	AF1-167 E	0.4272	Adder	0.5
945051	AF1-170 C	2.9067	Adder	3.42
945052	AF1-170 E	1.9378	Adder	2.28
945121	AF1-177	0.4336	Adder	0.51
945161	AF1-181	0.0677	Adder	0.08
945171	AF1-182	0.3383	Adder	0.4
945181	AF1-183	0.0910	Adder	0.11

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945331	AF1-198	0.2365	Adder	0.28
945451	AF1-210 C	0.6992	Adder	0.82
945452	AF1-210 E	0.4662	Adder	0.55
945491	AF1-214 C	0.8678	Adder	1.02
945492	AF1-214 E	0.5785	Adder	0.68
945551	AF1-220 C	8.6431	Adder	10.17
945552	AF1-220 E	5.7652	Adder	6.78
945671	AF1-232 C O2	14.9758	Adder	17.62
945672	AF1-232 E O2	8.0639	Adder	9.49
945751	AF1-240 C O1	1.4084	Adder	1.66
945752	AF1-240 E O1	0.9389	Adder	1.1
946071	AF1-272 C O1	15.7799	50/50	15.7799
946072	AF1-272 E O1	10.5200	50/50	10.5200
946081	AF1-273 C O1	7.3643	Adder	8.66
946082	AF1-273 E O1	4.9095	Adder	5.78
946111	AF1-276 C	7.5744	Adder	8.91
946112	AF1-276 E	3.7307	Adder	4.39
946121	AF1-277 C	7.5744	Adder	8.91
946122	AF1-277 E	3.7307	Adder	4.39
946131	AF1-278 C	6.0369	Adder	7.1
946132	AF1-278 E	3.0026	Adder	3.53
946211	AF1-286 C O1	0.7138	Adder	0.84
946212	AF1-286 E O1	0.4847	Adder	0.57
946221	AF1-287 C	0.8067	Adder	0.95
946222	AF1-287 E	0.5378	Adder	0.63
946381	AF1-302 C	1.5583	Adder	1.83
946382	AF1-302 E	2.0777	Adder	2.44
946401	AF1-304 C	4.9399	Adder	5.81
946402	AF1-304 E	3.2932	Adder	3.87
946421	AF1-306 C	4.3129	Adder	5.07
946422	AF1-306 E	17.2515	Adder	20.3
946431	AF1-307 C	7.1345	50/50	7.1345
946432	AF1-307 E	4.7563	50/50	4.7563
946571	AF1-321 C O1	2.2427	50/50	2.2427
946572	AF1-321 E O1	1.4951	50/50	1.4951
946771	AF1-217 C O2	0.8067	Adder	0.95
946772	AF1-217 E O2	0.5378	Adder	0.63
957001	AF2-001 C O2	2.2151	50/50	2.2151
957002	AF2-001 E O2	1.4767	50/50	1.4767
957011	AF2-002 C O2	1.1075	50/50	1.1075
957012	AF2-002 E O2	0.7384	50/50	0.7384
957161	AF2-010 C	1.7484	Adder	3.88
957162	AF2-010 E	1.1783	Adder	2.62
957451	AF2-039 C	0.4203	Adder	0.93
957452	AF2-039 E	0.2802	Adder	0.62
957512	AF2-045 E	1.4273	Adder	3.17
957561	AF2-050 C	5.5470	50/50	5.5470
957562	AF2-050 E	3.6980	50/50	3.6980
957571	AF2-051 C O2	1.3234	Adder	2.94
957572	AF2-051 E O2	0.6818	Adder	1.51
957581	AF2-052 C	2.2007	Adder	4.89
957582	AF2-052 E	1.0706	Adder	2.38

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957681	AF2-062 C	7.3711	Adder	16.36
957682	AF2-062 E	4.9141	Adder	10.91
957931	AF2-087 C	0.2059	Adder	0.46
957932	AF2-087 E	0.2835	Adder	0.63
957941	AF2-088 C	0.2023	Adder	0.45
957942	AF2-088 E	0.1349	Adder	0.3
957951	AF2-089 C	0.1406	Adder	0.31
957952	AF2-089 E	0.0724	Adder	0.16
957981	AF2-092 C	0.5693	Adder	1.26
957982	AF2-092 E	0.3796	Adder	0.84
958031	AF2-097 C	0.1003	Adder	0.22
958032	AF2-097 E	0.0669	Adder	0.15
958101	AF2-104 C	0.1802	Adder	0.4
958102	AF2-104 E	0.1201	Adder	0.27
958271	AF2-121 C	0.6949	Adder	1.54
958272	AF2-121 E	0.4633	Adder	1.03
958361	AF2-130 C	0.5615	Adder	1.25
958362	AF2-130 E	0.3743	Adder	0.83
958411	AF2-135 C	0.1900	Adder	0.42
958412	AF2-135 E	0.1267	Adder	0.28
958471	AF2-141	0.5067	Adder	1.12
958731	AF2-164 C O2	2.4418	Adder	5.42
958732	AF2-164 E O2	1.6279	Adder	3.61
958741	AF2-165 C	0.5404	Adder	1.2
958742	AF2-165 E	0.3603	Adder	0.8
958751	AF2-166 C	0.5615	Adder	1.25
958752	AF2-166 E	0.3743	Adder	0.83
959061	AF2-197 C O2	1.5489	Adder	3.44
959062	AF2-197 E O2	2.3233	Adder	5.16
959301	AF2-221 C	1.1633	50/50	1.1633
959302	AF2-221 E	1.6065	50/50	1.6065
959401	AF2-231 C	0.1442	Adder	0.32
959402	AF2-231 E	0.0961	Adder	0.21
959441	AF2-235 C	0.2557	Adder	0.57
959442	AF2-235 E	0.1705	Adder	0.38
959461	AF2-237 C	0.2267	Adder	0.5
959462	AF2-237 E	0.1511	Adder	0.34
959471	AF2-238 C	0.5755	Adder	1.28
959472	AF2-238 E	0.3836	Adder	0.85
959481	AF2-239 C	0.4355	Adder	0.97
959482	AF2-239 E	0.3492	Adder	0.78
959491	AF2-240 C	0.5044	Adder	1.12
959492	AF2-240 E	0.4297	Adder	0.95
959501	AF2-241 C	0.5278	Adder	1.17
959502	AF2-241 E	0.4064	Adder	0.9
959521	AF2-243 C	0.4053	Adder	0.9
959522	AF2-243 E	0.2702	Adder	0.6
959741	AF2-265 C	0.4124	Adder	0.92
959742	AF2-265 E	0.3069	Adder	0.68
959792	AF2-270 E	0.6558	50/50	0.6558
959802	AF2-271 E	0.1963	Adder	0.44
959822	AF2-273 E	0.1487	Adder	0.33

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960022	AF2-293 E	0.0448	Adder	0.1
960031	AF2-294 C	0.5171	Adder	1.15
960032	AF2-294 E	0.3447	Adder	0.77
960041	AF2-295 C	0.5478	Adder	1.22
960042	AF2-295 E	0.3652	Adder	0.81
960051	AF2-296 C	0.7607	Adder	1.69
960052	AF2-296 E	0.5072	Adder	1.13
960211	AF2-312 C	0.8320	Adder	1.85
960212	AF2-312 E	0.5547	Adder	1.23
960271	AF2-318 C	0.4709	Adder	1.05
960272	AF2-318 E	0.3139	Adder	0.7
960321	AF2-323 C O2	1.0517	Adder	2.33
960322	AF2-323 E O2	0.7011	Adder	1.56
960391	AF2-330 C	3.7356	Adder	8.29
960392	AF2-330 E	1.6339	Adder	3.63
960451	AF2-336 C O2	0.9492	Adder	2.11
960452	AF2-336 E O2	0.6328	Adder	1.4
960461	AF2-337 C O2	0.9492	Adder	2.11
960462	AF2-337 E O2	0.6328	Adder	1.4
960471	AF2-338 C O2	0.9492	Adder	2.11
960472	AF2-338 E O2	0.6328	Adder	1.4
960481	AF2-339 C O2	0.9492	Adder	2.11
960482	AF2-339 E O2	0.6328	Adder	1.4
960901	AF2-381 C	14.9091	50/50	14.9091
960902	AF2-381 E	7.8459	50/50	7.8459
961141	AF2-405	0.4671	Adder	1.04
961151	AF2-406	3.5031	Adder	7.78
961201	AF2-411 O2	16.4302	Adder	36.47
961211	AF2-412 O2	7.7183	Adder	17.13
961451	AF2-436	0.0528	Adder	0.12
NEWTON	NEWTON	0.5437	Confirmed LTF	0.5437
FARMERCITY	FARMERCITY	0.0283	Confirmed LTF	0.0283
G-007A	G-007A	0.0216	Confirmed LTF	0.0216
VFT	VFT	0.3289	Confirmed LTF	0.3289
CALDERWOOD	CALDERWOOD	0.2863	Confirmed LTF	0.2863
PRAIRIE	PRAIRIE	1.3277	Confirmed LTF	1.3277
CHEOAH	CHEOAH	0.2888	Confirmed LTF	0.2888
EDWARDS	EDWARDS	0.1694	Confirmed LTF	0.1694
TILTON	TILTON	0.3106	Confirmed LTF	0.3106
MADISON	MADISON	0.0302	Confirmed LTF	0.0302
GIBSON	GIBSON	0.2779	Confirmed LTF	0.2779
BLUEG	BLUEG	0.9027	Confirmed LTF	0.9027
TRIMBLE	TRIMBLE	0.2894	Confirmed LTF	0.2894
CATAWBA	CATAWBA	0.2138	Confirmed LTF	0.2138

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344415	200819	26ERIE SE	PENELEC	200600	26ERIE SO	PENELEC	8	PN-P2-3-PN-115-23D	breaker	866.0	101.51	102.0	DC	9.3

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	11.5912	50/50	11.5912
200643	26SENECA#2	10.9472	50/50	10.9472
200644	26SENECA#3	1.0779	50/50	1.0779
200649	26PENNTech	1.1711	50/50	1.1711
200823	26MHP_X3-003	1.3166	Adder	1.55
200849	26LAKVU GN	0.5452	50/50	0.5452
200894	26K02	4.7191	Adder	5.55
200898	26AA1-106	1.6819	Adder	1.98
201201	26WRREN CT	3.6060	50/50	3.6060
201477	26Y2-055	10.6273	50/50	10.6273
203349	26Z1-069 C	0.3106	50/50	0.3106
203909	26Z1-038	1.2989	Adder	1.53
203910	26Z1-091	1.6272	Adder	1.91
203999	P-047 E	7.1265	Adder	8.38
235003	AC1-025 E	0.1088	Adder	0.13
236828	01GRAYMONT	0.2998	Adder	0.35
294573	P-028 E	7.8999	Adder	9.29
915952	Y3-092 NFWR	131.5300	50/50	131.5300
916202	Z1-069 E	7.6755	50/50	7.6755
918682	AA1-082 E	4.5082	Adder	5.3
919201	AA1-144 OP	12.8380	Adder	15.1
919491	AA2-000	41.6966	Adder	49.05
920341	AA2-132 (Suspended)	1.7803	Adder	2.09
922932	AB1-082 OP (Suspended)	3.1553	50/50	3.1553
923442	AB1-160 C	0.0887	50/50	0.0887
923443	AB1-160 E	2.1930	50/50	2.1930
923821	AB2-019 FTWR	3.6828	50/50	3.6828
930511	AB1-092	1.5310	Adder	1.8
936421	AD2-055	3.1520	Adder	3.71
939171	AE1-147 C	0.9039	Adder	1.06
939172	AE1-147 E	0.6026	Adder	0.71
940201	AE2-001 C	0.9014	Adder	1.06
940202	AE2-001 E	0.6009	Adder	0.71
940681	AE2-055 C (Suspended)	0.8624	Adder	1.01
940682	AE2-055 E (Suspended)	0.5749	Adder	0.68
940861	AE2-074 C	2.3958	50/50	2.3958
940862	AE2-074 E	3.1538	50/50	3.1538
941191	AE2-113 C	10.5550	50/50	10.5550
941192	AE2-113 E	11.3643	50/50	11.3643
941261	AE2-120 C	0.8999	Adder	1.06
941262	AE2-120 E	0.6000	Adder	0.71

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
941271	AE2-121 C	0.4830	Adder	0.57
941272	AE2-121 E	0.3225	Adder	0.38
941321	AE2-126 C	1.5685	50/50	1.5685
941322	AE2-126 E	1.0457	50/50	1.0457
941331	AE2-129 C	0.8607	Adder	1.01
941332	AE2-129 E	0.5738	Adder	0.68
941351	AE2-131 C	0.8607	Adder	1.01
941352	AE2-131 E	0.5738	Adder	0.68
941421	AE2-139 C	4.8559	Adder	5.71
941422	AE2-139 E	3.2373	Adder	3.81
942351	AE2-248 C	0.7029	Adder	0.83
942352	AE2-248 E	0.4686	Adder	0.55
942491	AE2-262 C	4.3057	Adder	5.07
942492	AE2-262 E	2.8934	Adder	3.4
942501	AE2-263 C	4.0473	Adder	4.76
942502	AE2-263 E	2.7022	Adder	3.18
942811	AE2-299 C	18.6630	50/50	18.6630
942812	AE2-299 E	74.6522	50/50	74.6522
942961	AE2-316 C	2.8685	Adder	3.37
942962	AE2-316 E	4.0905	Adder	4.81
943351	AF1-006 C	2.6250	50/50	2.6250
943352	AF1-006 E	1.4766	50/50	1.4766
943751	AF1-043	9.4560	Adder	11.12
944001	AF1-068 C O1	0.9320	Adder	1.1
944002	AF1-068 E O1	0.5242	Adder	0.62
944301	AF1-098 C	23.9050	50/50	23.9050
944302	AF1-098 E	15.9366	50/50	15.9366
944311	AF1-099 C	6.5360	Adder	7.69
944312	AF1-099 E	4.3573	Adder	5.13
944321	AF1-100 C	13.9982	Adder	16.47
944322	AF1-100 E	9.3321	Adder	10.98
944381	AF1-103 O1	7.3352	50/50	7.3352
944411	AF1-106 O1	1.8731	Adder	2.2
944471	AF1-112 C	0.9418	Adder	1.11
944472	AF1-112 E	0.5297	Adder	0.62
944671	AF1-132 C O1	0.8710	Adder	1.02
944672	AF1-132 E O1	0.5807	Adder	0.68
944771	AF1-142 C	10.4576	Adder	12.3
944772	AF1-142 E	6.9717	Adder	8.2
944841	AF1-149 C	0.8998	Adder	1.06
944842	AF1-149 E	0.5999	Adder	0.71
944881	AF1-153 C O1	1.4118	50/50	1.4118
944882	AF1-153 E O1	0.9412	50/50	0.9412
944901	AF1-155 C	1.4022	50/50	1.4022
944902	AF1-155 E	0.9348	50/50	0.9348
945121	AF1-177	1.8338	50/50	1.8338
945161	AF1-181	0.0744	Adder	0.09
945171	AF1-182	0.3718	Adder	0.44
945181	AF1-183	0.0895	Adder	0.11
945331	AF1-198	0.2269	Adder	0.27
945491	AF1-214 C	0.9000	Adder	1.06
945492	AF1-214 E	0.6000	Adder	0.71

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945551	AF1-220 C	13.7619	50/50	13.7619
945552	AF1-220 E	9.1797	50/50	9.1797
946111	AF1-276 C	14.2094	50/50	14.2094
946112	AF1-276 E	6.9986	50/50	6.9986
946121	AF1-277 C	14.2094	50/50	14.2094
946122	AF1-277 E	6.9986	50/50	6.9986
946131	AF1-278 C	11.3251	50/50	11.3251
946132	AF1-278 E	5.6328	50/50	5.6328
946211	AF1-286 C O1	0.7586	Adder	0.89
946212	AF1-286 E O1	0.5151	Adder	0.61
946381	AF1-302 C	1.2526	Adder	1.47
946382	AF1-302 E	1.6701	Adder	1.96
946421	AF1-306 C	6.9690	50/50	6.9690
946422	AF1-306 E	27.8762	50/50	27.8762
957451	AF2-039 C	0.3683	Adder	0.82
957452	AF2-039 E	0.2455	Adder	0.54
957581	AF2-052 C	6.4628	50/50	6.4628
957582	AF2-052 E	3.1441	50/50	3.1441
957681	AF2-062 C	24.0768	50/50	24.0768
957682	AF2-062 E	16.0512	50/50	16.0512
957941	AF2-088 C	0.1773	Adder	0.39
957942	AF2-088 E	0.1182	Adder	0.26
958031	AF2-097 C	0.6152	50/50	0.6152
958032	AF2-097 E	0.4102	50/50	0.4102
958271	AF2-121 C	0.4562	Adder	1.01
958272	AF2-121 E	0.3041	Adder	0.68
959061	AF2-197 C O2	1.6755	Adder	3.72
959062	AF2-197 E O2	2.5132	Adder	5.58
959471	AF2-238 C	0.5528	Adder	1.23
959472	AF2-238 E	0.3685	Adder	0.82
959481	AF2-239 C	0.4656	Adder	1.03
959482	AF2-239 E	0.3733	Adder	0.83
959491	AF2-240 C	0.5361	Adder	1.19
959492	AF2-240 E	0.4567	Adder	1.01
959501	AF2-241 C	0.5609	Adder	1.25
959502	AF2-241 E	0.4318	Adder	0.96
959741	AF2-265 C	0.3961	Adder	0.88
959742	AF2-265 E	0.2948	Adder	0.65
960022	AF2-293 E	0.0466	Adder	0.1
960031	AF2-294 C	0.5690	Adder	1.26
960032	AF2-294 E	0.3793	Adder	0.84
960041	AF2-295 C	1.4022	50/50	1.4022
960042	AF2-295 E	0.9348	50/50	0.9348
960271	AF2-318 C	0.5033	Adder	1.12
960272	AF2-318 E	0.3355	Adder	0.74
961141	AF2-405	0.4964	Adder	1.1
961151	AF2-406	3.7227	Adder	8.26
961201	AF2-411 O2	14.6151	Adder	32.44
961211	AF2-412 O2	6.0890	Adder	13.52
961451	AF2-436	0.0581	Adder	0.13
NEWTON	NEWTON	1.4946	Confirmed LTF	1.4946
FARMERCITY	FARMERCITY	0.0768	Confirmed LTF	0.0768

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
G-007A	G-007A	4.5505	Confirmed LTF	4.5505
VFT	VFT	12.5517	Confirmed LTF	12.5517
CALDERWOOD	CALDERWOOD	0.5402	Confirmed LTF	0.5402
PRAIRIE	PRAIRIE	3.4819	Confirmed LTF	3.4819
CHEOAH	CHEOAH	0.5405	Confirmed LTF	0.5405
EDWARDS	EDWARDS	0.5089	Confirmed LTF	0.5089
TILTON	TILTON	0.9053	Confirmed LTF	0.9053
MADISON	MADISON	0.0585	Confirmed LTF	0.0585
GIBSON	GIBSON	0.7617	Confirmed LTF	0.7617
BLUEG	BLUEG	2.3905	Confirmed LTF	2.3905
TRIMBLE	TRIMBLE	0.7680	Confirmed LTF	0.7680
CATAWBA	CATAWBA	0.3028	Confirmed LTF	0.3028

13.5.13 Index 13

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
98767556	200908	26CHAPMAN+	PENELEC	235220	01MOSHAN	AP	1	Base Case	single	520.0	119.88	121.24	DC	7.1

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200851	26MEHOOP3	1.2333	80/20	1.2333
200887	26ARMNA MT	0.4098	80/20	0.4098
200898	26AA1-106	5.2259	80/20	5.2259
200917	26MTNTP_P28	0.6271	80/20	0.6271
200949	26X1-109	23.2285	80/20	23.2285
203261	26BLOSSBCT	0.5349	80/20	0.5349
203283	26MANOR_T86	0.0348	80/20	0.0348
203347	26NME_Y1-047	0.4160	80/20	0.4160
203349	26Z1-069 C	0.1271	80/20	0.1271
203350	26MILZ1-092	0.4296	80/20	0.4296
203351	26GROZ1-110	0.9014	80/20	0.9014
203352	26CANZ2-011	0.9014	80/20	0.9014
203907	26Y2-042	1.7588	80/20	1.7588
203909	26Z1-038	2.4133	80/20	2.4133
203910	26Z1-091	2.2137	80/20	2.2137
917631	Z2-104	0.0265	80/20	0.0265
919201	AA1-144 OP	30.8771	80/20	30.8771
919491	AA2-000	299.7786	80/20	299.7786
920341	AA2-132 (Suspended)	2.1184	80/20	2.1184
920351	AA2-133	0.4810	80/20	0.4810
923442	AB1-160 C	0.0363	80/20	0.0363
930511	AB1-092	11.0070	80/20	11.0070
934801	AD1-108	0.0679	80/20	0.0679
934811	AD1-109	0.0498	80/20	0.0498
934821	AD1-110	0.0314	80/20	0.0314
935061	AD1-142	0.0237	80/20	0.0237
936421	AD2-055	22.6614	80/20	22.6614
939171	AE1-147 C	-1.2320	Adder	-1.45
940681	AE2-055 C (Suspended)	-1.1421	Adder	-1.34
941421	AE2-139 C	15.4332	80/20	15.4332
943751	AF1-043	67.9843	80/20	67.9843
944411	AF1-106 O1	2.5028	80/20	2.5028
944841	AF1-149 C	-1.2231	Adder	-1.44
945331	AF1-198	0.4080	80/20	0.4080
946211	AF1-286 C O1	1.0136	80/20	1.0136
959061	AF2-197 C O2	7.0975	80/20	7.0975
959471	AF2-238 C	1.8316	80/20	1.8316
959481	AF2-239 C	1.7202	80/20	1.7202
959491	AF2-240 C	1.3515	80/20	1.3515
959501	AF2-241 C	1.4141	80/20	1.4141
959741	AF2-265 C	1.3126	80/20	1.3126
960031	AF2-294 C	1.2774	80/20	1.2774

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960271	AF2-318 C	1.8596	80/20	1.8596
961141	AF2-405	1.2514	80/20	1.2514
961151	AF2-406	9.3855	80/20	9.3855
961201	AF2-411 O2	29.7450	80/20	29.7450
961211	AF2-412 O2	11.3061	80/20	11.3061
961451	AF2-436	0.2102	80/20	0.2102
961461	AF2-437	0.1442	80/20	0.1442
NEWTON	NEWTON	0.4642	Confirmed LTF	0.4642
FARMERCITY	FARMERCITY	0.0240	Confirmed LTF	0.0240
G-007A	G-007A	2.3951	Confirmed LTF	2.3951
VFT	VFT	6.9402	Confirmed LTF	6.9402
CALDERWOOD	CALDERWOOD	0.1938	Confirmed LTF	0.1938
PRAIRIE	PRAIRIE	1.1004	Confirmed LTF	1.1004
CHEOAH	CHEOAH	0.1947	Confirmed LTF	0.1947
EDWARDS	EDWARDS	0.1536	Confirmed LTF	0.1536
TILTON	TILTON	0.2759	Confirmed LTF	0.2759
MADISON	MADISON	0.0161	Confirmed LTF	0.0161
GIBSON	GIBSON	0.2370	Confirmed LTF	0.2370
BLUEG	BLUEG	0.7517	Confirmed LTF	0.7517
TRIMBLE	TRIMBLE	0.2410	Confirmed LTF	0.2410
CATAWBA	CATAWBA	0.1243	Confirmed LTF	0.1243

13.5.14 Index 14

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344636	200924	26CANYON	PENELEC	200706	26N.MESHNP	PENELEC	1	AP-P1-2-WP-230-324T_FSA_A-B	single	666.0	125.35	127.92	DC	18.6

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200642	26SENECA#1	2.7835	80/20	2.7835
200643	26SENECA#2	2.6288	80/20	2.6288
200644	26SENECA#3	0.2588	80/20	0.2588
200887	26ARMNA MT	0.9749	80/20	0.9749
200898	26AA1-106	7.9120	80/20	7.9120
200949	26X1-109	60.8654	80/20	60.8654
201201	26WRREN CT	0.6284	80/20	0.6284
201477	26Y2-055	1.8543	80/20	1.8543
203261	26BLOSSBCT	1.0064	80/20	1.0064
203283	26MANOR_T86	0.0744	80/20	0.0744
203349	26Z1-069 C	0.4421	80/20	0.4421
203350	26MILZ1-092	1.0277	80/20	1.0277
203351	26GROZ1-110	1.3648	80/20	1.3648
203352	26CANZ2-011	1.3648	80/20	1.3648
919201	AA1-144 OP	74.9653	80/20	74.9653
919491	AA2-000	197.7334	80/20	197.7334
920341	AA2-132 (Suspended)	1.8688	80/20	1.8688
920351	AA2-133	0.5660	80/20	0.5660
922932	AB1-082 OP (Suspended)	2.8190	80/20	2.8190
923442	AB1-160 C	0.1263	80/20	0.1263
930511	AB1-092	7.2602	80/20	7.2602
934801	AD1-108	0.1029	80/20	0.1029
934811	AD1-109	0.0754	80/20	0.0754
935061	AD1-142	0.0568	80/20	0.0568
936421	AD2-055	14.9474	80/20	14.9474
940861	AE2-074 C	2.1405	80/20	2.1405
941191	AE2-113 C	5.1770	80/20	5.1770
941421	AE2-139 C	27.3328	80/20	27.3328
943751	AF1-043	44.8423	80/20	44.8423
944381	AF1-103 O1	1.2782	80/20	1.2782
944411	AF1-106 O1	5.9878	80/20	5.9878
945121	AF1-177	0.3196	80/20	0.3196
945331	AF1-198	0.7677	80/20	0.7677
946111	AF1-276 C	5.9315	80/20	5.9315
946121	AF1-277 C	5.9315	80/20	5.9315
946131	AF1-278 C	4.7275	80/20	4.7275
946211	AF1-286 C O1	2.4251	80/20	2.4251
957581	AF2-052 C	3.5405	80/20	3.5405
957681	AF2-062 C	10.9812	80/20	10.9812
959061	AF2-197 C O2	18.5976	80/20	18.5976

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
959471	AF2-238 C	3.7598	80/20	3.7598
959481	AF2-239 C	3.6826	80/20	3.6826
959491	AF2-240 C	3.2334	80/20	3.2334
959501	AF2-241 C	3.3831	80/20	3.3831
959741	AF2-265 C	2.6946	80/20	2.6946
960031	AF2-294 C	1.1269	80/20	1.1269
960271	AF2-318 C	3.9812	80/20	3.9812
961141	AF2-405	2.9939	80/20	2.9939
961151	AF2-406	22.4542	80/20	22.4542
961201	AF2-411 O2	75.4200	80/20	75.4200
961211	AF2-412 O2	29.9923	80/20	29.9923
961451	AF2-436	0.2473	80/20	0.2473
WEC	WEC	0.2800	Confirmed LTF	0.2800
LGEE	LGEE	0.4872	Confirmed LTF	0.4872
CPL	CPL	0.3076	Confirmed LTF	0.3076
CBM-W2	CBM-W2	6.5602	Confirmed LTF	6.5602
CBM-W1	CBM-W1	11.6468	Confirmed LTF	11.6468
TVA	TVA	1.0416	Confirmed LTF	1.0416
CBM-S2	CBM-S2	3.1732	Confirmed LTF	3.1732
CBM-S1	CBM-S1	6.5093	Confirmed LTF	6.5093
MEC	MEC	1.3602	Confirmed LTF	1.3602

13.5.15 Index 15

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344342	208009	LACK	PPL	200074	LACKAW	PJM	3	PL_P42_001057	breaker	1167.0	117.29	118.27	DC	25.04

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	5.2686	Adder	6.2
200894	26K02	8.7984	Adder	10.35
200898	26AA1-106	3.4019	Adder	4.0
203907	26Y2-042	5.6777	Adder	6.68
203909	26Z1-038	5.2687	Adder	6.2
203910	26Z1-091	4.3538	Adder	5.12
203999	P-047 E	13.0678	Adder	15.37
208052	LAEN G2	27.4578	50/50	27.4578
208053	LAEN G3	27.4578	50/50	27.4578
208055	LAEN G1	27.4578	50/50	27.4578
209003	KSTN IPP (Deactivation : 31/05/2020)	1.9890	Adder	2.34
209009	PEIP 2	3.5998	50/50	3.5998
209010	PEIP 1	2.1994	50/50	2.1994
209029	WAYM IPP	0.7331	50/50	0.7331
294573	P-028 E	31.6118	Adder	37.19
914271	Y2-089	30.4785	50/50	30.4785
916202	Z1-069 E	6.4890	Adder	7.63
917662	Z2-107 E (Suspended)	4.0592	Adder	4.78
918601	AA1-077 C	2.8007	50/50	2.8007
918602	AA1-077 E	37.7264	50/50	37.7264
918682	AA1-082 E	12.1435	Adder	14.29
919201	AA1-144 OP	33.8976	Adder	39.88
919491	AA2-000	47.2181	Adder	55.55
920341	AA2-132 (Suspended)	3.9251	Adder	4.62
922932	AB1-082 OP (Suspended)	1.7593	Adder	2.07
923443	AB1-160 E	1.8540	Adder	2.18
923673	AB1-182 E	3.5931	Adder	4.23
930511	AB1-092	1.7337	Adder	2.04
936421	AD2-055	3.5694	Adder	4.2
938331	AE1-051	4.0592	Adder	4.78
938401	AE1-059 C O1	55.0800	Adder	64.8
940861	AE2-074 C	1.3359	Adder	1.57
940862	AE2-074 E	1.7584	Adder	2.07
941421	AE2-139 C	11.5729	Adder	13.62
941422	AE2-139 E	7.7152	Adder	9.08
943751	AF1-043	10.7082	Adder	12.6
944411	AF1-106 O1	3.5170	Adder	4.14
945331	AF1-198	0.3829	Adder	0.45
946211	AF1-286 C O1	1.4244	Adder	1.68
946212	AF1-286 E O1	0.9672	Adder	1.14
957121	AF2-006 C	5.7306	50/50	5.7306

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957122	AF2-006 E	1.7211	Adder	3.82
957131	AF2-007 C	5.7306	50/50	5.7306
957132	AF2-007 E	1.7211	Adder	3.82
959061	AF2-197 C O2	4.5131	Adder	10.02
959062	AF2-197 E O2	6.7696	Adder	15.03
959471	AF2-238 C	1.0698	Adder	2.37
959472	AF2-238 E	0.7132	Adder	1.58
959481	AF2-239 C	1.2407	Adder	2.75
959482	AF2-239 E	0.9948	Adder	2.21
959491	AF2-240 C	1.0066	Adder	2.23
959492	AF2-240 E	0.8574	Adder	1.9
959501	AF2-241 C	1.0532	Adder	2.34
959502	AF2-241 E	0.8108	Adder	1.8
959741	AF2-265 C	0.7667	Adder	1.7
959742	AF2-265 E	0.5706	Adder	1.27
959912	AF2-282 E	0.6454	Adder	1.43
959922	AF2-283 E	0.4303	Adder	0.96
960031	AF2-294 C	1.2545	Adder	2.78
960032	AF2-294 E	0.8363	Adder	1.86
960271	AF2-318 C	1.3413	Adder	2.98
960272	AF2-318 E	0.8942	Adder	1.98
961141	AF2-405	0.9320	Adder	2.07
961151	AF2-406	6.9900	Adder	15.52
961201	AF2-411 O2	23.0336	Adder	51.13
961211	AF2-412 O2	9.2052	Adder	20.43
961451	AF2-436	0.1865	Adder	0.41
961461	AF2-437	0.2467	Adder	0.55
WEC	WEC	0.0891	Confirmed LTF	0.0891
LGEE	LGEE	0.1438	Confirmed LTF	0.1438
CBM-W2	CBM-W2	1.6544	Confirmed LTF	1.6544
CBM-W1	CBM-W1	4.0282	Confirmed LTF	4.0282
TVA	TVA	0.2058	Confirmed LTF	0.2058
O-066	O-066	32.5584	Confirmed LTF	32.5584
CBM-S1	CBM-S1	1.4228	Confirmed LTF	1.4228
G-007	G-007	4.6634	Confirmed LTF	4.6634
MEC	MEC	0.4004	Confirmed LTF	0.4004
CATAWBA	CATAWBA	0.0073	Confirmed LTF	0.0073

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344400	208009	LACK	PPL	200074	LACKAW	PJM	4	PL_P42_001055	breaker	1145.0	104.33	105.23	DC	22.58

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	4.7537	Adder	5.59
200894	26K02	7.9202	Adder	9.32
200898	26AA1-106	3.0638	Adder	3.6
203907	26Y2-042	5.1254	Adder	6.03
203909	26Z1-038	4.7538	Adder	5.59
203910	26Z1-091	3.9256	Adder	4.62
203999	P-047 E	11.7664	Adder	13.84
208052	LAEN G2	24.8026	50/50	24.8026
208053	LAEN G3	24.8026	50/50	24.8026
208055	LAEN G1	24.8026	50/50	24.8026
209003	KSTN IPP (Deactivation : 31/05/2020)	1.7967	Adder	2.11
209009	PEIP 2	3.2517	50/50	3.2517
209010	PEIP 1	1.9867	50/50	1.9867
209029	WAYM IPP	0.6622	50/50	0.6622
294573	P-028 E	28.5223	Adder	33.56
914271	Y2-089	27.5312	50/50	27.5312
916202	Z1-069 E	5.8297	Adder	6.86
917662	22-107 E (Suspended)	3.6666	Adder	4.31
918601	AA1-077 C	2.5299	50/50	2.5299
918602	AA1-077 E	34.0782	50/50	34.0782
918682	AA1-082 E	10.9475	Adder	12.88
919201	AA1-144 OP	30.5572	Adder	35.95
919491	AA2-000	42.3696	Adder	49.85
920341	AA2-132 (Suspended)	3.5376	Adder	4.16
922932	AB1-082 OP (Suspended)	1.5770	Adder	1.86
923443	AB1-160 E	1.6656	Adder	1.96
923673	AB1-182 E	3.1299	Adder	3.68
925951	AC1-071 C (Suspended)	2.7815	Adder	3.27
925952	AC1-071 E (Suspended)	18.6207	Adder	21.91
930511	AB1-092	1.5557	Adder	1.83
936421	AD2-055	3.2029	Adder	3.77
938331	AE1-051	3.6666	Adder	4.31
938401	AE1-059 C O1	45.1639	Adder	53.13
940861	AE2-074 C	1.1974	Adder	1.41
940862	AE2-074 E	1.5762	Adder	1.85
941421	AE2-139 C	10.4283	Adder	12.27
941422	AE2-139 E	6.9522	Adder	8.18
943751	AF1-043	9.6087	Adder	11.3
944411	AF1-106 O1	3.1680	Adder	3.73
945331	AF1-198	0.3446	Adder	0.41
946211	AF1-286 C O1	1.2830	Adder	1.51

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946212	AF1-286 E O1	0.8712	Adder	1.02
957121	AF2-006 C	5.1764	50/50	5.1764
957122	AF2-006 E	1.5547	Adder	3.45
957131	AF2-007 C	5.1764	50/50	5.1764
957132	AF2-007 E	1.5547	Adder	3.45
959061	AF2-197 C O2	4.0686	Adder	9.03
959062	AF2-197 E O2	6.1029	Adder	13.55
959471	AF2-238 C	0.9634	Adder	2.14
959472	AF2-238 E	0.6423	Adder	1.43
959481	AF2-239 C	1.1185	Adder	2.48
959482	AF2-239 E	0.8968	Adder	1.99
959491	AF2-240 C	0.9067	Adder	2.01
959492	AF2-240 E	0.7723	Adder	1.71
959501	AF2-241 C	0.9486	Adder	2.11
959502	AF2-241 E	0.7304	Adder	1.62
959741	AF2-265 C	0.6904	Adder	1.53
959742	AF2-265 E	0.5138	Adder	1.14
959912	AF2-282 E	0.5830	Adder	1.29
959922	AF2-283 E	0.3887	Adder	0.86
959942	AF2-285 E	0.2425	Adder	0.54
960031	AF2-294 C	1.1306	Adder	2.51
960032	AF2-294 E	0.7537	Adder	1.67
960271	AF2-318 C	1.2092	Adder	2.68
960272	AF2-318 E	0.8061	Adder	1.79
961141	AF2-405	0.8395	Adder	1.86
961151	AF2-406	6.2963	Adder	13.98
961201	AF2-411 O2	20.7253	Adder	46.01
961211	AF2-412 O2	8.2787	Adder	18.38
961261	AF2-417 C O2	1.4553	Adder	3.23
961262	AF2-417 E O2	0.9702	Adder	2.15
961451	AF2-436	0.1682	Adder	0.37
961461	AF2-437	0.2227	Adder	0.49
WEC	WEC	0.0589	Confirmed LTF	0.0589
LGEE	LGEE	0.0907	Confirmed LTF	0.0907
CBM-W2	CBM-W2	0.9419	Confirmed LTF	0.9419
CBM-W1	CBM-W1	2.7772	Confirmed LTF	2.7772
TVA	TVA	0.0938	Confirmed LTF	0.0938
O-066	O-066	26.6582	Confirmed LTF	26.6582
CBM-S1	CBM-S1	0.7157	Confirmed LTF	0.7157
G-007	G-007	3.9489	Confirmed LTF	3.9489
MEC	MEC	0.2542	Confirmed LTF	0.2542
CATAWBA	CATAWBA	0.0283	Confirmed LTF	0.0283

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344801	919490	AA2-000 TAP	PENELEC	200908	26CHAPMAN+	PENELEC	1	Base Case	single	546.0	114.17	115.47	DC	7.1

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200851	26MEHOOP3	1.2333	80/20	1.2333
200887	26ARMNA MT	0.4098	80/20	0.4098
200898	26AA1-106	5.2259	80/20	5.2259
200917	26MTNTP_P28	0.6271	80/20	0.6271
200949	26X1-109	23.2285	80/20	23.2285
203261	26BLOSSBCT	0.5349	80/20	0.5349
203283	26MANOR_T86	0.0348	80/20	0.0348
203347	26NME_Y1-047	0.4160	80/20	0.4160
203349	26Z1-069 C	0.1271	80/20	0.1271
203350	26MILZ1-092	0.4296	80/20	0.4296
203351	26GROZ1-110	0.9014	80/20	0.9014
203352	26CANZ2-011	0.9014	80/20	0.9014
203907	26Y2-042	1.7588	80/20	1.7588
203909	26Z1-038	2.4133	80/20	2.4133
203910	26Z1-091	2.2137	80/20	2.2137
917631	Z2-104	0.0265	80/20	0.0265
919201	AA1-144 OP	30.8771	80/20	30.8771
919491	AA2-000	299.7786	80/20	299.7786
920341	AA2-132 (Suspended)	2.1184	80/20	2.1184
920351	AA2-133	0.4810	80/20	0.4810
923442	AB1-160 C	0.0363	80/20	0.0363
930511	AB1-092	11.0070	80/20	11.0070
934801	AD1-108	0.0679	80/20	0.0679
934811	AD1-109	0.0498	80/20	0.0498
934821	AD1-110	0.0314	80/20	0.0314
935061	AD1-142	0.0237	80/20	0.0237
936421	AD2-055	22.6614	80/20	22.6614
939171	AE1-147 C	-1.2320	Adder	-1.45
940681	AE2-055 C (Suspended)	-1.1421	Adder	-1.34
941421	AE2-139 C	15.4332	80/20	15.4332
943751	AF1-043	67.9843	80/20	67.9843
944411	AF1-106 O1	2.5028	80/20	2.5028
944841	AF1-149 C	-1.2231	Adder	-1.44
945331	AF1-198	0.4080	80/20	0.4080
946211	AF1-286 C O1	1.0136	80/20	1.0136
959061	AF2-197 C O2	7.0975	80/20	7.0975
959471	AF2-238 C	1.8316	80/20	1.8316
959481	AF2-239 C	1.7202	80/20	1.7202
959491	AF2-240 C	1.3515	80/20	1.3515
959501	AF2-241 C	1.4141	80/20	1.4141
959741	AF2-265 C	1.3126	80/20	1.3126

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960031	AF2-294 C	1.2774	80/20	1.2774
960271	AF2-318 C	1.8596	80/20	1.8596
961141	AF2-405	1.2514	80/20	1.2514
961151	AF2-406	9.3855	80/20	9.3855
961201	AF2-411 O2	29.7450	80/20	29.7450
961211	AF2-412 O2	11.3061	80/20	11.3061
961451	AF2-436	0.2102	80/20	0.2102
961461	AF2-437	0.1442	80/20	0.1442
NEWTON	NEWTON	0.4642	Confirmed LTF	0.4642
FARMERCITY	FARMERCITY	0.0240	Confirmed LTF	0.0240
G-007A	G-007A	2.3951	Confirmed LTF	2.3951
VFT	VFT	6.9402	Confirmed LTF	6.9402
CALDERWOOD	CALDERWOOD	0.1938	Confirmed LTF	0.1938
PRAIRIE	PRAIRIE	1.1004	Confirmed LTF	1.1004
CHEOAH	CHEOAH	0.1947	Confirmed LTF	0.1947
EDWARDS	EDWARDS	0.1536	Confirmed LTF	0.1536
TILTON	TILTON	0.2759	Confirmed LTF	0.2759
MADISON	MADISON	0.0161	Confirmed LTF	0.0161
GIBSON	GIBSON	0.2370	Confirmed LTF	0.2370
BLUEG	BLUEG	0.7517	Confirmed LTF	0.7517
TRIMBLE	TRIMBLE	0.2410	Confirmed LTF	0.2410
CATAWBA	CATAWBA	0.1243	Confirmed LTF	0.1243

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344213	999391	26HOMER CT	PENELEC	200767	26HOMER CT	PENELEC	S	PN-P2-3-PN-230-9I	breaker	824.0	142.6	143.52	DC	16.84

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	2.2581	Adder	2.66
200831	26HNSMLK 4	2.3062	50/50	2.3062
200832	26HNSMLK 5	2.3062	50/50	2.3062
200838	26HOMER C2	55.4360	50/50	55.4360
200839	26HOMER C3	58.6863	50/50	58.6863
200894	26K02	6.8734	Adder	8.09
200898	26AA1-106	3.0195	Adder	3.55
201477	26Y2-055	4.7528	Adder	5.59
203349	26Z1-069 C	0.6127	50/50	0.6127
203907	26Y2-042	1.4740	Adder	1.73
203909	26Z1-038	2.2258	Adder	2.62
203910	26Z1-091	3.0268	Adder	3.56
203999	P-047 E	16.2571	Adder	19.13
294573	P-028 E	13.5487	Adder	15.94
915951	Y3-092 FTIR	139.7900	Merchant Transmission	139.7900
916202	Z1-069 E	15.1417	50/50	15.1417
917672	Z2-108 E	-1.9050	Adder	-2.24
917673	Z2-108 BAT	2.2412	Merchant Transmission	2.2412
918682	AA1-082 E	8.1675	Adder	9.61
919201	AA1-144 OP	22.9771	Adder	27.03
919491	AA2-000	46.5097	Adder	54.72
920341	AA2-132 (Suspended)	3.4030	Adder	4.0
922932	AB1-082 OP (Suspended)	5.4021	50/50	5.4021
923442	AB1-160 C	0.1750	50/50	0.1750
923443	AB1-160 E	4.3262	50/50	4.3262
930511	AB1-092	1.7077	Adder	2.01
936421	AD2-055	3.5159	Adder	4.14
938352	AE1-053 BAT	1.2451	Merchant Transmission	1.2451
938882	AE1-116 BAT	1.2997	Merchant Transmission	1.2997
938951	AE1-123	1.9425	Adder	2.29
939291	AE1-160 C	1.6510	Adder	1.94
939292	AE1-160 E	0.9490	Adder	1.12
940861	AE2-074 C	4.1018	50/50	4.1018
940862	AE2-074 E	5.3993	50/50	5.3993
941191	AE2-113 C	11.6833	Adder	13.75
941192	AE2-113 E	12.5792	Adder	14.8
941321	AE2-126 C	1.1273	Adder	1.33
941322	AE2-126 E	0.7515	Adder	0.88
941421	AE2-139 C	8.1793	Adder	9.62
941422	AE2-139 E	5.4528	Adder	6.42
942811	AE2-299 C	4.5446	Adder	5.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942812	AE2-299 E	18.1783	Adder	21.39
942961	AE2-316 C	5.5688	Adder	6.55
942962	AE2-316 E	7.9411	Adder	9.34
943151	AE2-344 C	9.5937	Adder	11.29
943152	AE2-344 E	6.3958	Adder	7.52
943351	AF1-006 C	1.6703	Adder	1.97
943352	AF1-006 E	0.9395	Adder	1.11
943751	AF1-043	10.5476	Adder	12.41
944261	AF1-094 C	1.5943	Adder	1.88
944262	AF1-094 E	1.0628	Adder	1.25
944281	AF1-096 C	1.5600	Adder	1.84
944282	AF1-096 E	1.0400	Adder	1.22
944301	AF1-098 C	6.7671	Adder	7.96
944302	AF1-098 E	4.5114	Adder	5.31
944321	AF1-100 C	11.7325	Adder	13.8
944322	AF1-100 E	7.8217	Adder	9.2
944381	AF1-103 O1	3.2766	Adder	3.85
944391	AF1-104 O1	2.4806	Adder	2.92
944411	AF1-106 O1	3.6963	Adder	4.35
944881	AF1-153 C O1	1.3320	Adder	1.57
944882	AF1-153 E O1	0.8880	Adder	1.04
944901	AF1-155 C	1.3359	Adder	1.57
944902	AF1-155 E	0.8906	Adder	1.05
945021	AF1-167 C	1.0020	Adder	1.18
945022	AF1-167 E	0.6692	Adder	0.79
945051	AF1-170 C	6.0691	Adder	7.14
945052	AF1-170 E	4.0460	Adder	4.76
945121	AF1-177	0.8191	Adder	0.96
945161	AF1-181	0.0611	Adder	0.07
945171	AF1-182	0.3051	Adder	0.36
945331	AF1-198	0.4849	Adder	0.57
945451	AF1-210 C	1.1249	Adder	1.32
945452	AF1-210 E	0.7499	Adder	0.88
945551	AF1-220 C	11.0386	Adder	12.99
945552	AF1-220 E	7.3631	Adder	8.66
945673	AF1-232 BAT	2.8870	Merchant Transmission	2.8870
946111	AF1-276 C	18.3526	50/50	18.3526
946112	AF1-276 E	9.0394	50/50	9.0394
946121	AF1-277 C	18.3526	50/50	18.3526
946122	AF1-277 E	9.0394	50/50	9.0394
946131	AF1-278 C	14.6273	50/50	14.6273
946132	AF1-278 E	7.2753	50/50	7.2753
946211	AF1-286 C O1	1.4970	Adder	1.76
946212	AF1-286 E O1	1.0165	Adder	1.2
946221	AF1-287 C	1.6546	Adder	1.95
946222	AF1-287 E	1.1031	Adder	1.3
946381	AF1-302 C	2.4318	Adder	2.86
946382	AF1-302 E	3.2424	Adder	3.81
946401	AF1-304 C	7.7632	Adder	9.13
946402	AF1-304 E	5.1755	Adder	6.09
946421	AF1-306 C	5.5327	Adder	6.51
946422	AF1-306 E	22.1309	Adder	26.04

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946771	AF1-217 C O2	1.6546	Adder	1.95
946772	AF1-217 E O2	1.1031	Adder	1.3
957161	AF2-010 C	3.2357	Adder	7.18
957162	AF2-010 E	2.1806	Adder	4.84
957513	AF2-045 BAT	1.3018	Merchant Transmission	1.3018
957571	AF2-051 C O2	2.6853	Adder	5.96
957572	AF2-051 E O2	1.3834	Adder	3.07
957581	AF2-052 C	9.5900	50/50	9.5900
957582	AF2-052 E	4.6654	50/50	4.6654
957681	AF2-062 C	34.1280	50/50	34.1280
957682	AF2-062 E	22.7520	50/50	22.7520
957951	AF2-089 C	0.2274	Adder	0.5
957952	AF2-089 E	0.1171	Adder	0.26
958031	AF2-097 C	0.2075	Adder	0.46
958032	AF2-097 E	0.1383	Adder	0.31
958361	AF2-130 C	0.7498	Adder	1.66
958362	AF2-130 E	0.4999	Adder	1.11
958472	AF2-141 BAT	1.3198	Merchant Transmission	1.3198
958731	AF2-164 C O2	5.3805	Adder	11.94
958732	AF2-164 E O2	3.5870	Adder	7.96
958741	AF2-165 C	0.8318	Adder	1.85
958742	AF2-165 E	0.5545	Adder	1.23
958751	AF2-166 C	0.7498	Adder	1.66
958752	AF2-166 E	0.4999	Adder	1.11
958791	AF2-170 C	0.7888	Adder	1.75
958792	AF2-170 E	0.5259	Adder	1.17
959061	AF2-197 C O2	3.0354	Adder	6.74
959062	AF2-197 E O2	4.5531	Adder	10.11
959441	AF2-235 C	0.4134	Adder	0.92
959442	AF2-235 E	0.2756	Adder	0.61
959461	AF2-237 C	0.4225	Adder	0.94
959462	AF2-237 E	0.2817	Adder	0.63
959471	AF2-238 C	1.1875	Adder	2.64
959472	AF2-238 E	0.7917	Adder	1.76
959481	AF2-239 C	0.8719	Adder	1.94
959482	AF2-239 E	0.6991	Adder	1.55
959491	AF2-240 C	1.0579	Adder	2.35
959492	AF2-240 E	0.9012	Adder	2.0
959501	AF2-241 C	1.1069	Adder	2.46
959502	AF2-241 E	0.8522	Adder	1.89
959521	AF2-243 C	0.6238	Adder	1.38
959522	AF2-243 E	0.4159	Adder	0.92
959741	AF2-265 C	0.8511	Adder	1.89
959742	AF2-265 E	0.6334	Adder	1.41
959793	AF2-270 BAT	0.1146	Merchant Transmission	0.1146
959822	AF2-273 E	0.2368	Adder	0.53
960031	AF2-294 C	1.0876	Adder	2.41
960032	AF2-294 E	0.7251	Adder	1.61
960041	AF2-295 C	0.7080	Adder	1.57
960042	AF2-295 E	0.4720	Adder	1.05
960271	AF2-318 C	0.9426	Adder	2.09
960272	AF2-318 E	0.6284	Adder	1.39

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960321	AF2-323 C O2	2.1354	Adder	4.74
960322	AF2-323 E O2	1.4236	Adder	3.16
960891	AF2-380 C	0.3777	Adder	0.84
960892	AF2-380 E	0.2518	Adder	0.56
961141	AF2-405	0.9795	Adder	2.17
961151	AF2-406	7.3464	Adder	16.31
961201	AF2-411 O2	78.8040	50/50	78.8040
961211	AF2-412 O2	38.0835	50/50	38.0835
961451	AF2-436	0.1051	Adder	0.23
961461	AF2-437	0.0640	Adder	0.14
WEC	WEC	0.0825	Confirmed LTF	0.0825
LGEE	LGEE	0.0884	Confirmed LTF	0.0884
CALDERWOOD	CALDERWOOD	0.0611	Confirmed LTF	0.0611
CBM-W2	CBM-W2	0.6552	Confirmed LTF	0.6552
CBM-W1	CBM-W1	5.1291	Confirmed LTF	5.1291
O-066	O-066	4.6435	Confirmed LTF	4.6435
CHEOAH	CHEOAH	0.0656	Confirmed LTF	0.0656
G-007	G-007	0.8476	Confirmed LTF	0.8476
MEC	MEC	0.3067	Confirmed LTF	0.3067
CATAWBA	CATAWBA	0.1176	Confirmed LTF	0.1176

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344143	999392	26HOMER CT	PENELEC	200767	26HOMER CT	PENELEC	N	PN-P2-3-PN-230-9E	breaker	807.0	162.12	163.06	DC	16.85

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200823	26MHP_X3-003	2.2564	Adder	2.65
200831	26HNSMLK 4	2.3113	50/50	2.3113
200832	26HNSMLK 5	2.3113	50/50	2.3113
200838	26HOMER C2	55.6552	50/50	55.6552
200839	26HOMER C3	58.9184	50/50	58.9184
200894	26K02	6.8715	Adder	8.08
200898	26AA1-106	3.0222	Adder	3.56
201477	26Y2-055	4.7584	Adder	5.6
203349	26Z1-069 C	0.6141	50/50	0.6141
203907	26Y2-042	1.4692	Adder	1.73
203909	26Z1-038	2.2240	Adder	2.62
203910	26Z1-091	3.0293	Adder	3.56
203999	P-047 E	16.2899	Adder	19.16
294573	P-028 E	13.5385	Adder	15.93
915951	Y3-092 FTIR	139.7200	Merchant Transmission	139.7200
916202	Z1-069 E	15.1780	50/50	15.1780
917672	Z2-108 E	-1.9286	Adder	-2.27
917673	Z2-108 BAT	2.2689	Merchant Transmission	2.2689
918682	AA1-082 E	8.1714	Adder	9.61
919201	AA1-144 OP	22.9896	Adder	27.05
919491	AA2-000	46.4350	Adder	54.63
920341	AA2-132 (Suspended)	3.4075	Adder	4.01
922932	AB1-082 OP (Suspended)	5.4154	50/50	5.4154
923442	AB1-160 C	0.1755	50/50	0.1755
923443	AB1-160 E	4.3366	50/50	4.3366
930511	AB1-092	1.7050	Adder	2.01
936421	AD2-055	3.5102	Adder	4.13
938352	AE1-053 BAT	1.2605	Merchant Transmission	1.2605
938882	AE1-116 BAT	1.3145	Merchant Transmission	1.3145
938951	AE1-123	1.9403	Adder	2.28
939291	AE1-160 C	1.6511	Adder	1.94
939292	AE1-160 E	0.9491	Adder	1.12
940861	AE2-074 C	4.1119	50/50	4.1119
940862	AE2-074 E	5.4127	50/50	5.4127
941191	AE2-113 C	11.7035	Adder	13.77
941192	AE2-113 E	12.6009	Adder	14.82
941321	AE2-126 C	1.1250	Adder	1.32
941322	AE2-126 E	0.7500	Adder	0.88
941421	AE2-139 C	8.1818	Adder	9.63
941422	AE2-139 E	5.4546	Adder	6.42
942811	AE2-299 C	4.5470	Adder	5.35

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942812	AE2-299 E	18.1881	Adder	21.4
942961	AE2-316 C	5.5705	Adder	6.55
942962	AE2-316 E	7.9436	Adder	9.35
943151	AE2-344 C	9.5973	Adder	11.29
943152	AE2-344 E	6.3982	Adder	7.53
943351	AF1-006 C	1.6704	Adder	1.97
943352	AF1-006 E	0.9396	Adder	1.11
943751	AF1-043	10.5306	Adder	12.39
944261	AF1-094 C	1.5946	Adder	1.88
944262	AF1-094 E	1.0630	Adder	1.25
944281	AF1-096 C	1.5601	Adder	1.84
944282	AF1-096 E	1.0401	Adder	1.22
944301	AF1-098 C	6.7704	Adder	7.97
944302	AF1-098 E	4.5136	Adder	5.31
944321	AF1-100 C	11.6905	Adder	13.75
944322	AF1-100 E	7.7936	Adder	9.17
944381	AF1-103 O1	3.2805	Adder	3.86
944391	AF1-104 O1	2.4801	Adder	2.92
944411	AF1-106 O1	3.7024	Adder	4.36
944881	AF1-153 C O1	1.3309	Adder	1.57
944882	AF1-153 E O1	0.8873	Adder	1.04
944901	AF1-155 C	1.3348	Adder	1.57
944902	AF1-155 E	0.8898	Adder	1.05
945021	AF1-167 C	1.0018	Adder	1.18
945022	AF1-167 E	0.6691	Adder	0.79
945051	AF1-170 C	6.0699	Adder	7.14
945052	AF1-170 E	4.0466	Adder	4.76
945121	AF1-177	0.8201	Adder	0.96
945161	AF1-181	0.0609	Adder	0.07
945171	AF1-182	0.3039	Adder	0.36
945331	AF1-198	0.4858	Adder	0.57
945451	AF1-210 C	1.1243	Adder	1.32
945452	AF1-210 E	0.7495	Adder	0.88
945551	AF1-220 C	11.0348	Adder	12.98
945552	AF1-220 E	7.3605	Adder	8.66
945673	AF1-232 BAT	2.9200	Merchant Transmission	2.9200
946111	AF1-276 C	18.3982	50/50	18.3982
946112	AF1-276 E	9.0618	50/50	9.0618
946121	AF1-277 C	18.3982	50/50	18.3982
946122	AF1-277 E	9.0618	50/50	9.0618
946131	AF1-278 C	14.6636	50/50	14.6636
946132	AF1-278 E	7.2934	50/50	7.2934
946211	AF1-286 C O1	1.4995	Adder	1.76
946212	AF1-286 E O1	1.0182	Adder	1.2
946221	AF1-287 C	1.6553	Adder	1.95
946222	AF1-287 E	1.1035	Adder	1.3
946381	AF1-302 C	2.4325	Adder	2.86
946382	AF1-302 E	3.2434	Adder	3.82
946401	AF1-304 C	7.7637	Adder	9.13
946402	AF1-304 E	5.1758	Adder	6.09
946421	AF1-306 C	5.5281	Adder	6.5
946422	AF1-306 E	22.1124	Adder	26.01

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
946771	AF1-217 C O2	1.6553	Adder	1.95
946772	AF1-217 E O2	1.1035	Adder	1.3
957161	AF2-010 C	3.2363	Adder	7.18
957162	AF2-010 E	2.1810	Adder	4.84
957513	AF2-045 BAT	1.3172	Merchant Transmission	1.3172
957571	AF2-051 C O2	2.6879	Adder	5.97
957572	AF2-051 E O2	1.3847	Adder	3.07
957581	AF2-052 C	9.6122	50/50	9.6122
957582	AF2-052 E	4.6762	50/50	4.6762
957681	AF2-062 C	34.2168	50/50	34.2168
957682	AF2-062 E	22.8112	50/50	22.8112
957951	AF2-089 C	0.2274	Adder	0.5
957952	AF2-089 E	0.1171	Adder	0.26
958031	AF2-097 C	0.2075	Adder	0.46
958032	AF2-097 E	0.1383	Adder	0.31
958361	AF2-130 C	0.7494	Adder	1.66
958362	AF2-130 E	0.4996	Adder	1.11
958472	AF2-141 BAT	1.3361	Merchant Transmission	1.3361
958731	AF2-164 C O2	5.3922	Adder	11.97
958732	AF2-164 E O2	3.5948	Adder	7.98
958741	AF2-165 C	0.8318	Adder	1.85
958742	AF2-165 E	0.5545	Adder	1.23
958751	AF2-166 C	0.7494	Adder	1.66
958752	AF2-166 E	0.4996	Adder	1.11
958791	AF2-170 C	0.7887	Adder	1.75
958792	AF2-170 E	0.5258	Adder	1.17
959061	AF2-197 C O2	3.0369	Adder	6.74
959062	AF2-197 E O2	4.5553	Adder	10.11
959441	AF2-235 C	0.4134	Adder	0.92
959442	AF2-235 E	0.2756	Adder	0.61
959461	AF2-237 C	0.4226	Adder	0.94
959462	AF2-237 E	0.2817	Adder	0.63
959471	AF2-238 C	1.1896	Adder	2.64
959472	AF2-238 E	0.7931	Adder	1.76
959481	AF2-239 C	0.8726	Adder	1.94
959482	AF2-239 E	0.6996	Adder	1.55
959491	AF2-240 C	1.0596	Adder	2.35
959492	AF2-240 E	0.9027	Adder	2.0
959501	AF2-241 C	1.1087	Adder	2.46
959502	AF2-241 E	0.8536	Adder	1.89
959521	AF2-243 C	0.6239	Adder	1.38
959522	AF2-243 E	0.4159	Adder	0.92
959741	AF2-265 C	0.8525	Adder	1.89
959742	AF2-265 E	0.6344	Adder	1.41
959793	AF2-270 BAT	0.1159	Merchant Transmission	0.1159
959822	AF2-273 E	0.2367	Adder	0.53
960031	AF2-294 C	1.0890	Adder	2.42
960032	AF2-294 E	0.7260	Adder	1.61
960041	AF2-295 C	0.7074	Adder	1.57
960042	AF2-295 E	0.4716	Adder	1.05
960271	AF2-318 C	0.9433	Adder	2.09
960272	AF2-318 E	0.6289	Adder	1.4

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960321	AF2-323 C O2	2.1372	Adder	4.74
960322	AF2-323 E O2	1.4248	Adder	3.16
960891	AF2-380 C	0.3764	Adder	0.84
960892	AF2-380 E	0.2509	Adder	0.56
961141	AF2-405	0.9811	Adder	2.18
961151	AF2-406	7.3586	Adder	16.33
961201	AF2-411 O2	78.9900	50/50	78.9900
961211	AF2-412 O2	38.1862	50/50	38.1862
961451	AF2-436	0.1051	Adder	0.23
961461	AF2-437	0.0638	Adder	0.14
WEC	WEC	0.0564	Confirmed LTF	0.0564
LGEE	LGEE	0.0405	Confirmed LTF	0.0405
CALDERWOOD	CALDERWOOD	0.1039	Confirmed LTF	0.1039
CBM-W1	CBM-W1	4.1033	Confirmed LTF	4.1033
O-066	O-066	5.2416	Confirmed LTF	5.2416
CHEOAH	CHEOAH	0.1081	Confirmed LTF	0.1081
G-007	G-007	0.9412	Confirmed LTF	0.9412
MEC	MEC	0.1732	Confirmed LTF	0.1732
CATAWBA	CATAWBA	0.1481	Confirmed LTF	0.1481

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ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC DC	MW IMPACT
99344243	999401	KEYSTONE	PJM	200011	KEYSTONE	PJM	4	PJM500_PN_P4-500-001D	breaker	634.0	141.38	142.0	DC	8.6

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
200636	26IUP CO-G	0.5021	50/50	0.5021
200794	26CONEMAGH	0.3401	50/50	0.3401
200805	26COLVER13 (Deactivation : 01/09/2020)	19.4986	50/50	19.4986
200809	26SITHE	1.5787	50/50	1.5787
200833	26SEWRDB34	16.4203	50/50	16.4203
200837	26HOMER C1	27.1889	50/50	27.1889
200838	26HOMER C2	22.7783	50/50	22.7783
200839	26HOMER C3	24.1138	50/50	24.1138
200846	26FORWARD	0.1849	50/50	0.1849
200864	K-013 E	4.2867	50/50	4.2867
200883	Q-053 E	6.7034	Adder	7.89
200888	26HIGHLAND	0.4021	50/50	0.4021
200894	26K02	4.2797	Adder	5.03
200898	26AA1-106	1.6191	Adder	1.9
200906	26KEYSTN#3	0.8346	50/50	0.8346
200925	26R32	0.4640	50/50	0.4640
201477	26Y2-055	2.5158	Adder	2.96
202158	26CON.GEN1	0.0871	50/50	0.0871
202160	26CON.GEN2	0.0608	50/50	0.0608
203910	26Z1-091	1.4616	Adder	1.72
203999	P-047 E	7.6650	Adder	9.02
235003	AC1-025 E	0.1066	Adder	0.13
236828	01GRAYMONT	0.2892	Adder	0.34
290086	Q-036 E	4.7423	Adder	5.58
292350	K-023	3.9316	Adder	4.63
292542	L-013 1	3.8240	Adder	4.5
293301	N-039 E	8.9004	Adder	10.47
293393	V3-030E	4.0991	Adder	4.82
293432	R-040 E	0.2151	Adder	0.25
293603	O-018 E	9.3246	50/50	9.3246
293902	O-048 E	3.4416	Adder	4.05
294515	O38_P22	7.7878	Adder	9.16
294903	P-060 E	6.1011	Adder	7.18
296332	R-032 E	10.7592	50/50	10.7592
913142	Y1-033 E OP1	3.1285	Adder	3.68
916202	Z1-069 E	6.1111	Adder	7.19
917672	Z2-108 E	2.1510	Adder	2.53
918682	AA1-082 E	4.1676	Adder	4.9
919201	AA1-144 OP	11.8571	Adder	13.95
919491	AA2-000	36.9465	Adder	43.47

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
920341	AA2-132 (Suspended)	1.6179	Adder	1.9
922932	AB1-082 OP (Suspended)	2.2235	Adder	2.62
923443	AB1-160 E	1.7460	Adder	2.05
930511	AB1-092	1.3566	Adder	1.6
935191	AD1-154	2.3474	Adder	2.76
936421	AD2-055	2.7929	Adder	3.29
936991	AD2-133 C	2.1340	Adder	2.51
936992	AD2-133 E	9.7609	Adder	11.48
938351	AE1-053	1.1950	Adder	1.41
938881	AE1-116	0.6374	Adder	0.75
938951	AE1-123	1.6446	Adder	1.93
938991	AE1-128 C	12.6893	50/50	12.6893
938992	AE1-128 E	8.4595	50/50	8.4595
939171	AE1-147 C	0.8699	Adder	1.02
939172	AE1-147 E	0.5799	Adder	0.68
939291	AE1-160 C	1.0211	Adder	1.2
939292	AE1-160 E	0.5869	Adder	0.69
940201	AE2-001 C	0.8685	Adder	1.02
940202	AE2-001 E	0.5790	Adder	0.68
940681	AE2-055 C (Suspended)	0.8483	Adder	1.0
940682	AE2-055 E (Suspended)	0.5656	Adder	0.67
940861	AE2-074 C	1.6883	Adder	1.99
940862	AE2-074 E	2.2224	Adder	2.61
941191	AE2-113 C	6.6071	Adder	7.77
941192	AE2-113 E	7.1137	Adder	8.37
941231	AE2-117 C	1.0882	Adder	1.28
941232	AE2-117 E	0.7255	Adder	0.85
941241	AE2-118 C	1.0882	Adder	1.28
941242	AE2-118 E	0.7255	Adder	0.85
941261	AE2-120 C	0.8677	Adder	1.02
941262	AE2-120 E	0.5785	Adder	0.68
941271	AE2-121 C	0.4637	Adder	0.55
941272	AE2-121 E	0.3096	Adder	0.36
941321	AE2-126 C	1.1540	Adder	1.36
941322	AE2-126 E	0.7694	Adder	0.91
941331	AE2-129 C	1.3112	Adder	1.54
941332	AE2-129 E	0.8741	Adder	1.03
941351	AE2-131 C	1.3112	Adder	1.54
941352	AE2-131 E	0.8741	Adder	1.03
941421	AE2-139 C	4.4628	Adder	5.25
941422	AE2-139 E	2.9752	Adder	3.5
942121	AE2-224 C	11.0940	50/50	11.0940
942122	AE2-224 E	7.3960	50/50	7.3960
942351	AE2-248 C	0.6854	Adder	0.81
942352	AE2-248 E	0.4570	Adder	0.54
942491	AE2-262 C	3.9028	Adder	4.59
942492	AE2-262 E	2.6227	Adder	3.09
942501	AE2-263 C	3.6686	Adder	4.32
942502	AE2-263 E	2.4494	Adder	2.88
942511	AE2-264 C	5.1755	Adder	6.09
942512	AE2-264 E	3.4503	Adder	4.06
942811	AE2-299 C	2.1929	Adder	2.58

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
942812	AE2-299 E	8.7715	Adder	10.32
942961	AE2-316 C	3.5685	Adder	4.2
942962	AE2-316 E	5.0887	Adder	5.99
943151	AE2-344 C	4.6736	Adder	5.5
943152	AE2-344 E	3.1157	Adder	3.67
943351	AF1-006 C	0.8073	Adder	0.95
943352	AF1-006 E	0.4541	Adder	0.53
943711	AF1-039 C O1	0.8277	Adder	0.97
943712	AF1-039 E O1	0.5518	Adder	0.65
943751	AF1-043	8.3788	Adder	9.86
944001	AF1-068 C O1	0.9112	Adder	1.07
944002	AF1-068 E O1	0.5125	Adder	0.6
944181	AF1-086 C O1	2.7924	Adder	3.29
944182	AF1-086 E O1	12.1484	Adder	14.29
944261	AF1-094 C	0.8554	Adder	1.01
944262	AF1-094 E	0.5702	Adder	0.67
944281	AF1-096 C	0.9648	Adder	1.14
944282	AF1-096 E	0.6432	Adder	0.76
944301	AF1-098 C	3.3713	Adder	3.97
944302	AF1-098 E	2.2475	Adder	2.64
944311	AF1-099 C	5.9244	Adder	6.97
944312	AF1-099 E	3.9496	Adder	4.65
944321	AF1-100 C	12.6059	Adder	14.83
944322	AF1-100 E	8.4040	Adder	9.89
944381	AF1-103 O1	1.7343	Adder	2.04
944411	AF1-106 O1	1.7626	Adder	2.07
944471	AF1-112 C	0.9162	Adder	1.08
944472	AF1-112 E	0.5154	Adder	0.61
944671	AF1-132 C O1	0.8528	Adder	1.0
944672	AF1-132 E O1	0.5685	Adder	0.67
944691	AF1-134 C O1	1.4353	Adder	1.69
944692	AF1-134 E O1	0.9569	Adder	1.13
944751	AF1-140 C	1.4386	Adder	1.69
944752	AF1-140 E	0.9590	Adder	1.13
944771	AF1-142 C	9.4791	Adder	11.15
944772	AF1-142 E	6.3194	Adder	7.43
944781	AF1-143 C	7.1701	Adder	8.44
944782	AF1-143 E	3.8240	Adder	4.5
944841	AF1-149 C	0.8677	Adder	1.02
944842	AF1-149 E	0.5785	Adder	0.68
944881	AF1-153 C O1	1.0338	Adder	1.22
944882	AF1-153 E O1	0.6892	Adder	0.81
944901	AF1-155 C	1.0336	Adder	1.22
944902	AF1-155 E	0.6890	Adder	0.81
945021	AF1-167 C	0.6395	Adder	0.75
945022	AF1-167 E	0.4272	Adder	0.5
945051	AF1-170 C	2.9067	Adder	3.42
945052	AF1-170 E	1.9378	Adder	2.28
945121	AF1-177	0.4336	Adder	0.51
945161	AF1-181	0.0677	Adder	0.08
945171	AF1-182	0.3383	Adder	0.4
945181	AF1-183	0.0910	Adder	0.11

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
945331	AF1-198	0.2365	Adder	0.28
945451	AF1-210 C	0.6992	Adder	0.82
945452	AF1-210 E	0.4662	Adder	0.55
945491	AF1-214 C	0.8678	Adder	1.02
945492	AF1-214 E	0.5785	Adder	0.68
945551	AF1-220 C	8.6431	Adder	10.17
945552	AF1-220 E	5.7652	Adder	6.78
945671	AF1-232 C O2	14.9758	Adder	17.62
945672	AF1-232 E O2	8.0639	Adder	9.49
945751	AF1-240 C O1	1.4084	Adder	1.66
945752	AF1-240 E O1	0.9389	Adder	1.1
946071	AF1-272 C O1	15.7799	50/50	15.7799
946072	AF1-272 E O1	10.5200	50/50	10.5200
946081	AF1-273 C O1	7.3643	Adder	8.66
946082	AF1-273 E O1	4.9095	Adder	5.78
946111	AF1-276 C	7.5744	Adder	8.91
946112	AF1-276 E	3.7307	Adder	4.39
946121	AF1-277 C	7.5744	Adder	8.91
946122	AF1-277 E	3.7307	Adder	4.39
946131	AF1-278 C	6.0369	Adder	7.1
946132	AF1-278 E	3.0026	Adder	3.53
946211	AF1-286 C O1	0.7138	Adder	0.84
946212	AF1-286 E O1	0.4847	Adder	0.57
946221	AF1-287 C	0.8067	Adder	0.95
946222	AF1-287 E	0.5378	Adder	0.63
946381	AF1-302 C	1.5583	Adder	1.83
946382	AF1-302 E	2.0777	Adder	2.44
946401	AF1-304 C	4.9399	Adder	5.81
946402	AF1-304 E	3.2932	Adder	3.87
946421	AF1-306 C	4.3129	Adder	5.07
946422	AF1-306 E	17.2515	Adder	20.3
946431	AF1-307 C	7.1345	50/50	7.1345
946432	AF1-307 E	4.7563	50/50	4.7563
946571	AF1-321 C O1	2.2427	50/50	2.2427
946572	AF1-321 E O1	1.4951	50/50	1.4951
946771	AF1-217 C O2	0.8067	Adder	0.95
946772	AF1-217 E O2	0.5378	Adder	0.63
957001	AF2-001 C O2	2.2151	50/50	2.2151
957002	AF2-001 E O2	1.4767	50/50	1.4767
957011	AF2-002 C O2	1.1075	50/50	1.1075
957012	AF2-002 E O2	0.7384	50/50	0.7384
957161	AF2-010 C	1.7484	Adder	3.88
957162	AF2-010 E	1.1783	Adder	2.62
957451	AF2-039 C	0.4203	Adder	0.93
957452	AF2-039 E	0.2802	Adder	0.62
957512	AF2-045 E	1.4273	Adder	3.17
957561	AF2-050 C	5.5470	50/50	5.5470
957562	AF2-050 E	3.6980	50/50	3.6980
957571	AF2-051 C O2	1.3234	Adder	2.94
957572	AF2-051 E O2	0.6818	Adder	1.51
957581	AF2-052 C	2.2007	Adder	4.89
957582	AF2-052 E	1.0706	Adder	2.38

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
957681	AF2-062 C	7.3711	Adder	16.36
957682	AF2-062 E	4.9141	Adder	10.91
957931	AF2-087 C	0.2059	Adder	0.46
957932	AF2-087 E	0.2835	Adder	0.63
957941	AF2-088 C	0.2023	Adder	0.45
957942	AF2-088 E	0.1349	Adder	0.3
957951	AF2-089 C	0.1406	Adder	0.31
957952	AF2-089 E	0.0724	Adder	0.16
957981	AF2-092 C	0.5693	Adder	1.26
957982	AF2-092 E	0.3796	Adder	0.84
958031	AF2-097 C	0.1003	Adder	0.22
958032	AF2-097 E	0.0669	Adder	0.15
958101	AF2-104 C	0.1802	Adder	0.4
958102	AF2-104 E	0.1201	Adder	0.27
958271	AF2-121 C	0.6949	Adder	1.54
958272	AF2-121 E	0.4633	Adder	1.03
958361	AF2-130 C	0.5615	Adder	1.25
958362	AF2-130 E	0.3743	Adder	0.83
958411	AF2-135 C	0.1900	Adder	0.42
958412	AF2-135 E	0.1267	Adder	0.28
958471	AF2-141	0.5067	Adder	1.12
958731	AF2-164 C O2	2.4418	Adder	5.42
958732	AF2-164 E O2	1.6279	Adder	3.61
958741	AF2-165 C	0.5404	Adder	1.2
958742	AF2-165 E	0.3603	Adder	0.8
958751	AF2-166 C	0.5615	Adder	1.25
958752	AF2-166 E	0.3743	Adder	0.83
959061	AF2-197 C O2	1.5489	Adder	3.44
959062	AF2-197 E O2	2.3233	Adder	5.16
959301	AF2-221 C	1.1633	50/50	1.1633
959302	AF2-221 E	1.6065	50/50	1.6065
959401	AF2-231 C	0.1442	Adder	0.32
959402	AF2-231 E	0.0961	Adder	0.21
959441	AF2-235 C	0.2557	Adder	0.57
959442	AF2-235 E	0.1705	Adder	0.38
959461	AF2-237 C	0.2267	Adder	0.5
959462	AF2-237 E	0.1511	Adder	0.34
959471	AF2-238 C	0.5755	Adder	1.28
959472	AF2-238 E	0.3836	Adder	0.85
959481	AF2-239 C	0.4355	Adder	0.97
959482	AF2-239 E	0.3492	Adder	0.78
959491	AF2-240 C	0.5044	Adder	1.12
959492	AF2-240 E	0.4297	Adder	0.95
959501	AF2-241 C	0.5278	Adder	1.17
959502	AF2-241 E	0.4064	Adder	0.9
959521	AF2-243 C	0.4053	Adder	0.9
959522	AF2-243 E	0.2702	Adder	0.6
959741	AF2-265 C	0.4124	Adder	0.92
959742	AF2-265 E	0.3069	Adder	0.68
959792	AF2-270 E	0.6558	50/50	0.6558
959802	AF2-271 E	0.1963	Adder	0.44
959822	AF2-273 E	0.1487	Adder	0.33

Bus #	Bus	Gendeliv MW Impact	Type	Full MW Impact
960022	AF2-293 E	0.0448	Adder	0.1
960031	AF2-294 C	0.5171	Adder	1.15
960032	AF2-294 E	0.3447	Adder	0.77
960041	AF2-295 C	0.5478	Adder	1.22
960042	AF2-295 E	0.3652	Adder	0.81
960051	AF2-296 C	0.7607	Adder	1.69
960052	AF2-296 E	0.5072	Adder	1.13
960211	AF2-312 C	0.8320	Adder	1.85
960212	AF2-312 E	0.5547	Adder	1.23
960271	AF2-318 C	0.4709	Adder	1.05
960272	AF2-318 E	0.3139	Adder	0.7
960321	AF2-323 C O2	1.0517	Adder	2.33
960322	AF2-323 E O2	0.7011	Adder	1.56
960391	AF2-330 C	3.7356	Adder	8.29
960392	AF2-330 E	1.6339	Adder	3.63
960451	AF2-336 C O2	0.9492	Adder	2.11
960452	AF2-336 E O2	0.6328	Adder	1.4
960461	AF2-337 C O2	0.9492	Adder	2.11
960462	AF2-337 E O2	0.6328	Adder	1.4
960471	AF2-338 C O2	0.9492	Adder	2.11
960472	AF2-338 E O2	0.6328	Adder	1.4
960481	AF2-339 C O2	0.9492	Adder	2.11
960482	AF2-339 E O2	0.6328	Adder	1.4
960901	AF2-381 C	14.9091	50/50	14.9091
960902	AF2-381 E	7.8459	50/50	7.8459
961141	AF2-405	0.4671	Adder	1.04
961151	AF2-406	3.5031	Adder	7.78
961201	AF2-411 O2	16.4302	Adder	36.47
961211	AF2-412 O2	7.7183	Adder	17.13
961451	AF2-436	0.0528	Adder	0.12
NEWTON	NEWTON	0.5437	Confirmed LTF	0.5437
FARMERCITY	FARMERCITY	0.0283	Confirmed LTF	0.0283
G-007A	G-007A	0.0216	Confirmed LTF	0.0216
VFT	VFT	0.3289	Confirmed LTF	0.3289
CALDERWOOD	CALDERWOOD	0.2863	Confirmed LTF	0.2863
PRAIRIE	PRAIRIE	1.3277	Confirmed LTF	1.3277
CHEOAH	CHEOAH	0.2888	Confirmed LTF	0.2888
EDWARDS	EDWARDS	0.1694	Confirmed LTF	0.1694
TILTON	TILTON	0.3106	Confirmed LTF	0.3106
MADISON	MADISON	0.0302	Confirmed LTF	0.0302
GIBSON	GIBSON	0.2779	Confirmed LTF	0.2779
BLUEG	BLUEG	0.9027	Confirmed LTF	0.9027
TRIMBLE	TRIMBLE	0.2894	Confirmed LTF	0.2894
CATAWBA	CATAWBA	0.2138	Confirmed LTF	0.2138

13.6 Contingency Descriptions - Secondary POI

Contingency Name	Contingency Definition
PN-P2-2-PN-230-001T	CONTINGENCY 'PN-P2-2-PN-230-001T' /* HOMER CITY NORTH 230KV BUS DISCONNECT BRANCH FROM BUS 200769 TO BUS 200767 TO BUS 202640 CKT N/* 26HOMER CY 345 26HOMER CT 230 26HOMERCITYN 23.00 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200807 CKT 1 /* 26HOMER CT 230 26PIERC230 230 REMOVE MACHINE 1 FROM BUS 200809 /* 26SITHE 138 DISCONNECT BUS 200807 /* 26PIERC230 230 DISCONNECT BUS 200808 /* 26PIERC138 138 DISCONNECT BUS 200809 /* 26SITHE 138 END
PL_P42_001057	CONTINGENCY 'PL_P42_001057' /* LACK-PAUP 230KV STUCK BREAKER CONNECTED TO LACK TR2 DISCONNECT BRANCH FROM BUS 208009 TO BUS 925950 CKT 1 /* LACK-AC1-071 TAP 230 DISCONNECT BRANCH FROM BUS 208009 TO BUS 211681 CKT 2 /* LACK-LACK 230/69KV T2 DISCONNECT BRANCH FROM BUS 208009 TO BUS 200074 CKT 4 /* LACK-LACKAW 500/230KV T4 END
PL_P42_001056	CONTINGENCY 'PL_P42_001056' /* LACK-SUMT 2 230KV STUCK BREAKER CONNECTED TO LACK TR1 DISCONNECT BRANCH FROM BUS 208009 TO BUS 200074 CKT 3 /* LACK-LACKAW 500- 230 T3 DISCONNECT BRANCH FROM BUS 208009 TO BUS 208090 CKT 2 /* LACK-SUMT 2 230 DISCONNECT BRANCH FROM BUS 208009 TO BUS 211681 CKT 1 /* LACK-LACK 230-69 T1 END
PL_P42_001055	CONTINGENCY 'PL_P42_001055' /* LACK-SUMT 1 230KV STUCK BREAKER CONNECTED TO LACK TR1 DISCONNECT BRANCH FROM BUS 208009 TO BUS 200074 CKT 3 /* LACK-LACKAW 500- 230 T3 DISCONNECT BRANCH FROM BUS 208009 TO BUS 211681 CKT 1 /* LACK-LACK 230-69 T1 DISCONNECT BRANCH FROM BUS 208009 TO BUS 208090 CKT 1 /* LACK-SUMT 1 230 END
AP-P1-2-WP-230-324T_FSA_A-B	CONTINGENCY 'AP-P1-2-WP-230-324T_FSA_A-B' /* MOSHANNON-MARSHALL 230KV APS-PN TIE DISCONNECT BRANCH FROM BUS 235220 TO BUS 200908 CKT 1 /* 01MOSHAN 230 26CHAPMAN+ 230 DISCONNECT BRANCH FROM BUS 200908 TO BUS 919490 CKT 1 /* 26CHAPMAN+ 230 AA2-000 TAP 230 END

Contingency Name	Contingency Definition
PL_P12_000193	CONTINGENCY 'PL_P12_000193' /* NMES-LACK 230KV LINE DISCONNECT BRANCH FROM BUS 200677 TO BUS 200706 CKT 3 /* NO MESHO- N.MESHPN 115-230 DISCONNECT BRANCH FROM BUS 200706 TO BUS 200708 CKT 1 /* N.MESHPN-OXBOW 230 DISCONNECT BRANCH FROM BUS 200708 TO BUS 208009 CKT 1 /* OXBOW-LACK 230 DISCONNECT BRANCH FROM BUS 200708 TO BUS 200709 CKT 1 /* OXBOW-OXBOW 230-34.5 END
AP-P1-2-WP-230-005B	CONTINGENCY 'AP-P1-2-WP-230-005B' /* QUEUE AE2-262 - MOSHANNON 230KV DISCONNECT BRANCH FROM BUS 942490 TO BUS 235219 CKT 1 /* AE2-262 TAP 230 01MILES B 230 END
PN-P1-2-PN-230-102T	CONTINGENCY 'PN-P1-2-PN-230-102T' /* NORTH MESHOPPEN - LACKAWANNA 230KV RTEP B2952 DISCONNECT BRANCH FROM BUS 200706 TO BUS 200708 CKT 1 /* 26N.MESHPN 230 26OXBOW 230 DISCONNECT BRANCH FROM BUS 200708 TO BUS 208009 CKT 1 /* 26OXBOW 230 LACK 230 DISCONNECT BRANCH FROM BUS 200708 TO BUS 200709 CKT 1 /* 26OXBOW 230 26OXBOW 35 END
AP-P1-3-WP-230-326T	CONTINGENCY 'AP-P1-3-WP-230-326T' /* SHINGLETOWN #82 230/46KV XFMR DISCONNECT BRANCH FROM BUS 235248 TO BUS 236711 CKT 82 /* 01SHINGL 230 01SHINGLTN 46 DISCONNECT BRANCH FROM BUS 235248 TO BUS 200513 CKT 1 /* 01SHINGL 230 26LEWISTWN 230 DISCONNECT BRANCH FROM BUS 235248 TO BUS 235970 CKT 1 /* 01SHINGL 230 01DALE 230 DISCONNECT BUS 237058 /*SHINGLETOWN 230 KV CAPACITOR END
ATSI-P2-3-CEI-345-004D	CONTINGENCY 'ATSI-P2-3-CEI-345-004D' /* ERIE WEST 345KV BKR 8 DISCONNECT BRANCH FROM BUS 200599 TO BUS 200600 CKT 1 /* 26ERIE W 345 26ERIE SO 345 DISCONNECT BRANCH FROM BUS 200599 TO BUS 238547 CKT 1 /* 26ERIE W 345 02AT 345 DISCONNECT BRANCH FROM BUS 238547 TO BUS 239036 CKT 1 /* 02AT 345 02PERRY 345 DISCONNECT BRANCH FROM BUS 238547 TO BUS 239082 CKT 1 /* 02AT 345 02S8-ATT 345 DISCONNECT BUS 200600 /* 26ERIE SO 345 DISCONNECT BUS 238547 /* 02AT 345 END

Contingency Name	Contingency Definition
PL_P13_100348	CONTINGENCY 'PL_P13_100348' /* LACK 500/230KV T4 DISCONNECT BRANCH FROM BUS 200074 TO BUS 208009 CKT 4 /* LACK-LACKAW 500-230 T3 END
PL_P42_101231	CONTINGENCY 'PL_P42_101231' /* LACK-PAUP 230 KV - STUCK CB AT LACK 3E DISCONNECT BUS 200708 /* /* DISCONNECT BRANCH FROM BUS 200706 TO BUS 200677 CKT 3 /* /* DISCONNECT BRANCH FROM BUS 208009 TO BUS 925950 CKT 1 /* /* DISCONNECT BRANCH FROM BUS 208009 TO BUS 211681 CKT 2 /* /* END
AP-P2-2-WP-230-005T	CONTINGENCY 'AP-P2-2-WP-230-005T' /* SHINGLETOWN #2 230KV BUS DISCONNECT BRANCH FROM BUS 235248 TO BUS 235970 CKT 1 /* 01SHINGL 230 01DALE 230 DISCONNECT BRANCH FROM BUS 235248 TO BUS 200513 CKT 1 /* 01SHINGL 230 26LEWISTWN 230 DISCONNECT BRANCH FROM BUS 235248 TO BUS 236711 CKT 82 /* 01SHINGL 230 01SHINGLTN 46 DISCONNECT BUS 237058 /*SHINGLETOWN 230 KV CAPACITOR END
PN-P2-3-PN-230-9I	CONTINGENCY 'PN-P2-3-PN-230-9I' /* 579 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200807 CKT 1 /* 26HOMER CT 230 26PIERC230 230 DISCONNECT BRANCH FROM BUS 200807 TO BUS 200808 CKT 1 /* 26PIERC230 230 26PIERC138 138 DISCONNECT BRANCH FROM BUS 200808 TO BUS 200809 CKT 1 /* 26PIERC138 138 26SITHE 138 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200769 TO BUS 202640 CKT N/* 26HOMER CT 230 26HOMER CY 345 26HOMERCITYN 23.00 REMOVE MACHINE 1 FROM BUS 200809 /* 26SITHE 138 END
PL_P13_100347	CONTINGENCY 'PL_P13_100347' /* LACK 500/230KV T3 DISCONNECT BRANCH FROM BUS 200074 TO BUS 208009 CKT 3 /* LACK-LACKAW 500-230 T3 END

Contingency Name	Contingency Definition
PN-P2-3-PN-115-23D	CONTINGENCY 'PN-P2-3-PN-115-23D' /* 622 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200568 CKT 6 /* 26ERIE SO. 115 26ERIE SO. 230 DISCONNECT BRANCH FROM BUS 200568 TO BUS 200600 CKT 5 /* 26ERIE SO. 230 26ERIE SO 345 DISCONNECT BRANCH FROM BUS 200568 TO BUS 200641 CKT 7 /* 26ERIE SO. 230 26ERIE S C 35 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200571 CKT 1 /* 26ERIE SO. 115 26UNION CY 115 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200572 CKT 1 /* 26ERIE SO. 115 26EDINB S. 115 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200850 CKT 1 /* 26ERIE SO. 115 26GESG TAP 115 DISCONNECT BRANCH FROM BUS 200567 TO BUS 200589 CKT 1 /* 26ERIE SO. 115 26FR RD. W 115 DISCONNECT BRANCH FROM BUS 200589 TO BUS 200635 CKT 5 /* 26FR RD. W 115 26FR RD W. 35 REDUCE BUS 200568 SHUNT BY 100 PERCENT /* 26ERIE SO. 230 END
PN-P1-2-PN-230-013A	CONTINGENCY 'PN-P1-2-PN-230-013A' /* EAST TOWANDA - NORTH MESHOPPEN 230KV DISCONNECT BRANCH FROM BUS 200675 TO BUS 200924 CKT 1 /* 26E.TWANDA 230 26CANYON 230 DISCONNECT BRANCH FROM BUS 200924 TO BUS 200706 CKT 1 /* 26CANYON 230 26N.MESHPN 230 END
AP-P1-2-WP-230-322T	CONTINGENCY 'AP-P1-2-WP-230-322T' /* SHINGLETOWN-SHAWVILLE 230KV APS-PN TIE DISCONNECT BRANCH FROM BUS 235248 TO BUS 200726 CKT 1 /* 01SHINGL 230 26SHAWVL 2 230 END
PL_P13_100329	CONTINGENCY 'PL_P13_100329' /* LACK 230/69KV LACK T1 DISCONNECT BRANCH FROM BUS 200074 TO BUS 208009 CKT 3 /* LACK-LACKAW 500- 230 T3 DISCONNECT BRANCH FROM BUS 211681 TO BUS 208009 CKT 1 /* LACK-LACK 230-69 T1 END
PL_P13_100328	CONTINGENCY 'PL_P13_100328' /* LACK 230/69KV T2 DISCONNECT BRANCH FROM BUS 211681 TO BUS 208009 CKT 2 /* LACK T2 DISCONNECT BRANCH FROM BUS 200074 TO BUS 208009 CKT 4 /* LACK T4 END

Contingency Name	Contingency Definition
PN-P1-2-PN-345-107T	CONTINGENCY 'PN-P1-2-PN-345-107T' /* ERIE WEST - ASHTABULA - PERRY 345KV DISCONNECT BRANCH FROM BUS 200599 TO BUS 238547 CKT 1 /* 26ERIE W 345 02AT 345 DISCONNECT BRANCH FROM BUS 238547 TO BUS 239082 CKT 1 /* 02AT 345 02S8-ATT 345 DISCONNECT BRANCH FROM BUS 238547 TO BUS 239036 CKT 1 /* 02AT 345 02PERRY 345 DISCONNECT BUS 238547 /* 02AT 345 END
PN-P2-3-PN-230-9E	CONTINGENCY 'PN-P2-3-PN-230-9E' /* 575 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200769 TO BUS 202641 CKT S/* 26HOMER CT 230 26HOMER CY 345 26HOMERCITYS 23.00 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200837 CKT 1 /* 26HOMER CT 230 26HOMER C1 20 REMOVE MACHINE 1 FROM BUS 200837 /* 26HOMER C1 20 END
PN-P1-3-PN-230-006	CONTINGENCY 'PN-P1-3-PN-230-006' /* ERIE SOUTH #8 345/230KV XFMR DISCONNECT BRANCH FROM BUS 200600 TO BUS 200819 CKT 8 /* 26ERIE SO 345 26ERIE SE 230 END
PN-P1-3-PN-230-004A	CONTINGENCY 'PN-P1-3-PN-230-004A' /* HOMER CITY SOUTH 345/230KV XFMR DISCONNECT BRANCH FROM BUS 200769 TO BUS 200767 TO BUS 202641 CKT S/* 26HOMER CY 345 26HOMER CT 230 26HOMERCITYS 23.00 END
AP-P1-3-WP-230-005	CONTINGENCY 'AP-P1-3-WP-230-005' /* MILESBUURG #82 230/46KV XFMR DISCONNECT BRANCH FROM BUS 235219 TO BUS 236745 CKT 82 /* 01MILES SB 230 01MILES BG 46 DISCONNECT BRANCH FROM BUS 942490 TO BUS 235219 CKT 1 /* AE2-262 TAP 230 01MILES SB 230 END
PN-P1-3-PN-500-001AT	CONTINGENCY 'PN-P1-3-PN-500-001AT' /* KEYSTONE #3 500/230 KV XFMR OPEN BRANCH FROM BUS 200011 TO BUS 200810 CKT 3 /* KEYSTONE 500.00 26KEYSTONE 230.00 END
Base Case	
200908 26CHAPMAN+ 230 919490 AA2-000 TAP 230 1	CONTINGENCY '200908 26CHAPMAN+ 230 919490 AA2-000 TAP 230 1' OPEN BRANCH FROM BUS 200908 TO BUS 919490 CKT 1 END

Contingency Name	Contingency Definition
PN-P1-2-PN-230-101T	CONTINGENCY 'PN-P1-2-PN-230-101T' /* EAST TOWANDA - HILLSIDE 230KV DISCONNECT BRANCH FROM BUS 200675 TO BUS 130763 CKT 1 /* 26E.TWANDA 230 HILSD230 230 END
PJM500_PN_P4-500-001A	CONTINGENCY 'PJM500_PN_P4-500-001A' /* KEYSTONE 500KV BKR 1 DISCONNECT BRANCH FROM BUS 200011 TO BUS 200810 CKT 3 /* KEYSTONE 500 26KEYSTONE 230 REMOVE MACHINE H FROM BUS 200033 /* KEYS G2 20 REMOVE MACHINE L FROM BUS 200033 /* KEYS G2 20 DISCONNECT BUS 200033 /* KEYS G2 20 END
PN-P1-3-PN-230-003A	CONTINGENCY 'PN-P1-3-PN-230-003A' /* HOMER CITY NORTH 345/230KV XFMR DISCONNECT BRANCH FROM BUS 200769 TO BUS 200767 TO BUS 202640 CKT N/* 26HOMER CY 345 26HOMER CT 230 26HOMERCITYN 23.00 END
PL_P42_000445	CONTINGENCY 'PL_P42_000445' /* NMES-LACK 230KV STUCK BREAKER CONNECTED TO NMES TR3 DISCONNECT BRANCH FROM BUS 200074 TO BUS 208009 CKT 3 /* LACK 500/230 T3 DISCONNECT BRANCH FROM BUS 208009 TO BUS 211681 CKT 1 /* LACK 230/69 T1 DISCONNECT BRANCH FROM BUS 200708 TO BUS 208009 CKT 1 /* OXBOW-LACK 230 DISCONNECT BRANCH FROM BUS 200708 TO BUS 200709 CKT 1 /* OXBOW-OXBOW 230-34.5 DISCONNECT BRANCH FROM BUS 200706 TO BUS 200677 CKT 3 /* N.MESHPN- MESH2REA 230-115 DISCONNECT BRANCH FROM BUS 200706 TO BUS 200708 CKT 1 /* N.MESHPN-OXBOW 230 END
PL_P42_000444	CONTINGENCY 'PL_P42_000444' /* NMES-LACK 230KV STUCK BREAKER CONNECTED TO LACK TR2 DISCONNECT BRANCH FROM BUS 200708 TO BUS 200709 CKT 1 /* OXBOW-OXBOW 230-34.5 DISCONNECT BRANCH FROM BUS 208009 TO BUS 200074 CKT 4 /* LACK-LACKAW 500- 230 T4 DISCONNECT BRANCH FROM BUS 208009 TO BUS 211681 CKT 2 /* LACK-LACK 230-69 DISCONNECT BRANCH FROM BUS 200706 TO BUS 200708 CKT 1 /* N.MESHPN-OXBOW 230 DISCONNECT BRANCH FROM BUS 200708 TO BUS 208009 CKT 1 /* OXBOW-LACK 230 DISCONNECT BRANCH FROM BUS 200677 TO BUS 200706 CKT 3 /* MESH2REA- N.MESHPN 115-230 END

Contingency Name	Contingency Definition
PJM500_PN_P4-500-001D	CONTINGENCY 'PJM500_PN_P4-500-001D' /* KEYSTONE 500KV BKR 4 DISCONNECT BRANCH FROM BUS 200011 TO BUS 200810 CKT 3 /* KEYSTONE 500 26KEYSTONE 230 REMOVE MACHINE H FROM BUS 200032 /* KEYS G1 20 REMOVE MACHINE L FROM BUS 200032 /* KEYS G1 20 DISCONNECT BUS 200032 /* KEYS G1 20 END
ATSI-P1-2-CEI-345-700T	CONTINGENCY 'ATSI-P1-2-CEI-345-700T' /* PN/ATSI ERIE WEST - ASHTABULA - PERRY 345KV DISCONNECT BRANCH FROM BUS 239036 TO BUS 238547 CKT 1 /* 02PERRY 345 02AT 345 DISCONNECT BRANCH FROM BUS 238547 TO BUS 239082 CKT 1 /* 02AT 345 02S8-ATT 345 DISCONNECT BRANCH FROM BUS 239082 TO BUS 238544 CKT 8 /* 02S8-ATT 345 02ASH_3 138 DISCONNECT BRANCH FROM BUS 238547 TO BUS 200599 CKT 1 /* 02AT 345 26ERIE W 345 END
200908 26CHAPMAN+ 230 235220 01MOSHAN 230 230 1	CONTINGENCY '200908 26CHAPMAN+ 230 235220 01MOSHAN 230 230 1' OPEN BRANCH FROM BUS 200908 TO BUS 235220 CKT 1 END
PN-P2-3-PN-230-9G-A	CONTINGENCY 'PN-P2-3-PN-230-9G-A' /* HOMER CITY 230 KV STUCK BREAKER 208 (HOOVERSVILLE/SHELOCTA) DISCONNECT BRANCH FROM BUS 200767 TO BUS 200768 CKT 1 /* 26HOMER CT 230 26QUEMAHON 230 DISCONNECT BRANCH FROM BUS 200768 TO BUS 200796 CKT 1 /* 26QUEMAHON 230 26HOOVERSVL 230 DISCONNECT BRANCH FROM BUS 200743 TO BUS 200796 CKT 3 /* 26HOOVERSV 115 26HOOVERSVL 230 DISCONNECT BRANCH FROM BUS 200767 TO BUS 200795 CKT 1 /* 26HOMER CT 230 26SHELOCTA 230 END

14 Affected Systems

14.1 NYISO

NYISO Impacts to be determined during later study phases (as applicable).

15 Attachment 1: One Line Diagram